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THE ADVANCEMENT OF MEDICAL EDUCATION

PRESIDENT'S ADDRESS

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As I look back on forty years of medical practice I realize that I have lived in a period of medical progress greater and more rapid than any that has ever previously occurred in the world's history. Johns Hopkins Hospital, where for two years I was assistant resident, had opened its doors just five years before I came there. At that time it was considered the last word in hospital construction. Under the leadership of that remarkable quartet composed of Kelly, Halstead, Welch and Osler it stood at the peak of medical science and medical practice in our country. Howard Kelly, with his marvelous dexterity and operative skill, inventive genius, exploring the bladder and catheterizing the ureters, the only man in the country able to do so at that time, was easily the leading gynecologist of the United States if not the world. Thomas Halstead with his great contributions to surgery, surgical pathology and surgical technic was an outstanding leader in his field. William Welch, of beloved memory, had already made many great contributions to the knowledge of pathology. Of even greater worth, he brought pathology from the laboratory and necropsy room to the bedside and made it an integral part of clinical teaching and clinical practice. And there William Osler, often called the greatest of modern physicians, gave some fifteen of the most productive years of his life. Great as a medical scientist and clinician, he seemed greatest as a teacher and a source of inspiration to other physicians. Like the immortal Johann Müller, he inspired all assistants and students with whom he came in contact.

As I look back I try to visualize the modern intern, and indeed the modern hospital staff as well, were they compelled to work under the conditions existing then in the leading medical institutions in the country. I believe they would be quite at a loss or even helpless. In addition to the history taking in a ward of twenty-eight beds and assisting in the operating room, the assistant resident was required to do all the clinical laboratory work for his ward. This sounds much more than it implies today, however. The laboratory contained for routine work merely some test tubes, Fehling's solution, nitric acid and the stains for the tubercle bacillus. Occasionally one used the bromine test for urea and the fermentation test for urinary sugar. Occasionally also we used the hemoglobinometer and counted the red and white blood cells, but our results were often haphazard. Thayer had just been doing his work in the fertile malarial districts around Baltimore, so that we looked for and not infrequently found the elusive plasmodium. Ehrlich had just announced his early experiments with blood stains, and with his long copper drying bar and triacid stain we often produced results fearful to behold. We knew the more common pathogenic bacteria and tested for them on our own laboratory made mediums.

The laboratory was without technicians, blood chemistry, agglutination tests, blood typing, determination of liver or kidney function, and Wassermann and tolerance tests. Above all there were no x-rays. One winter day I read on the bulletin board the announcement that a distinguished American professor of dentistry would give a lecture that afternoon in the hospital amphitheater. After an interesting and informal talk, he passed around a half-dozen glass photographic and crude plates, which had been given him a month or so previously by his friend one Professor Roentgen. These were the first x-ray plates brought to this country. There was no seer among us to prophesy what this seeming scientific curiosity was to mean to dentistry and medicine!

In those days there was no knowledge of insect-borne diseases, food deficiency diseases—except perhaps scurvy—vitamins, endocrines, hormones, insulin, virus diseases, the electrocardiogram, allergy, serology, standardized drugs and other innumerable improvements of modern therapy. These are the harvest of the last forty years. The average modern medical student tries to acquire them in four hectic years of forced mental feeding. Some were taught ten, twenty or thirty years ago. Whatever the date of graduation, however, the newly pledged doctor is a perishable article sold under a guaranty that is good only on that date. There is not even an expiration date as on vaccine or serum. In a few months, certainly in a few years, unless he keeps up with the march of progress he lags behind.

The graduate of ten or twenty years ago has had to add to his basic information as much as he acquired in his college course, if not more. Legally when he receives his license to practice he is a finished product; actually he has just made a fair start in his educational life. His future progress under present conditions is a matter entirely of his desire for self improvement and personal initiative, stimulated by ambition or financial self interest. That so many of those in practice do keep well abreast of the march of progress is a gratifying tribute to the spirit of our profession. The fact that some do not progress is a matter of great concern and a subject for serious consideration.

POSTGRADUATE EDUCATION

There are four main procedures by which postgraduate self education is attainable: First by personal experience and clinical observation—the method of

President's address before the American Medical Association at the Eighty-Eighth Annual Session, Atlantic City, N. J., June 8, 1937.

Hippocrates, Galen and Sydenham. This should be the habit of every physician as an underlying part of his program.

Second, training in postgraduate colleges. This is mainly directed toward the development of education in the various specialties and, while excellent, affects only a relatively small percentage of physicians.

Third, through medical publications. We have more and better medical publications today than are available in any other country in the world. For this the American Medical Association is largely responsible by setting up standards in every field and thus aiding the advancement of general and specialized knowledge. The existence of so many of our publications is definitely a response to the widespread demand for the latest medical information.

Fourth, through medical society meetings. For centuries it has been the habit of physicians to assemble from time to time to discuss mutual problems, relate experiences of medical practice and announce new discoveries. In the early days of this country this practice was followed in the better settled areas. Many medical societies have already celebrated the one hundredth anniversary of continuous existence. Ninety years ago the American Medical Association was founded to organize the medical profession on a national basis, correlate the activities of the constituent societies, and present at its annual meeting the latest developments of medical progress.

In the county society there is the opportunity for all members to report cases and present papers on medical subjects. Guest speakers add to the value and interest of the programs and increase their educational value. A by-product of this plan of organization has been the great improvement in the mutual relations of the local members. The regular meetings of county medical societies have led to better acquaintance and mutual respect between the members; friendliness and cooperation have replaced enmity and discord, to the great gain in the quality of local medical practice.

The annual meetings of the state medical associations represent a higher grade of postgraduate instruction. The excellence of the scientific programs and the high quality of the discussions at these meetings indicate how they are meeting their responsibilities. In forty states last year the average attendance was 38 per cent of the membership.

The highest grade in our organization educational scheme is the annual meeting of the American Medical Association with its splendid programs of scientific papers and technical discussions covering every department of medicine. Annually from 5 to 8 per cent of our entire membership attends these meetings. And yet the medical meetings I have mentioned are merely the beginning. In every large city and in many states there are sectional and special societies holding frequent meetings. In the latest American Medical Directory 140 national and sectional societies are listed, and to these must be added the almost countless hospital staff meetings throughout the country.

The Council on Medical Education and Hospitals lists 6,189 approved hospitals, each of which is supposed to hold a monthly staff meeting for ten months of the year. It is staggering to contemplate the grand total of all these meetings. Here certainly is definite proof of the urge for self improvement of the members of our profession. The multiplicity of meetings, however, has become a burden. Conditions are chaotic and the problem merits serious consideration.

Several years ago, programs of postgraduate study were organized for the use of county societies with weekly outlines published in THE JOURNAL. Some good resulted but in general this scheme failed because of the lack of leadership and trained individuals in the various areas to oversee and carry out the courses. In some states in the last few years, efforts have been made to carry on this sort of instruction through the cooperation of medical colleges and state associations. Systematic courses in the newer developments of medical science with their application to general practice have been carried to strategic points in their states by traveling groups of trained clinicians and medical teachers. In this way large numbers are reached with a minimum of effort and loss of time.

Our best argument against the establishment of foreign schemes of socialized medicine is continued maintenance of the high plane of medical practice in this country. A large percentage of lagging members constitutes a beam in our professional eye.

There is already a trend toward compulsory evidence of postgraduate improvement. At first there was merely moral suasion in the requiring of evidence of fitness by passing examinations for admission to membership in the various national special societies. A second step has been taken in the recognition of such membership in the classification of specialists in the American Medical Directory. In several states there are laws requiring annual registration of physicians. While, apparently, not utilized to any extent as yet, the authority is seemingly present to weed out undesirables such as narcotic addicts and those guilty of criminal offenses. There is the possibility that the next step might be a requirement for renewal of licensure through evidence of familiarity with the developments in medicine by five or ten year periodic examinations.

THE COUNCIL ON MEDICAL EDUCATION

The Council on Medical Education and Hospitals in the last thirty years has done a monumental service to medical education and the public. As the chairman, Dr. Wilbur, said in his address before the Congress on Medical Education and Licensure last February, "The record of thirty years shows that the Council on Medical Education, exercising an effective and impartial supervision over the training of physicians, has brought about an advance unparalleled in the history of education." In its first inspection and grading of medical colleges it did much to remedy a situation that was a reproach and indeed a scandal to the name of medical education. In its second inspection of the last two years it has carried on that work in logical sequence and further advanced the standards of our colleges so that they compare favorably with any in the world.

In its inspection of hospitals and the institution of standards for intern training it has initiated a definite program for providing the public with thoroughly qualified practitioners. From that time on, however, the practitioner is left largely to his own devices and his personal initiative as to his future development.

This council has no legal status or statutory power of enforcement, but by support of medical opinion and the publicity given its reports in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION it was able to reduce the number of 186 medical colleges, some good, many bad and the remainder indifferent, to seventy-five of acceptable quality. Much the same result has been apparent in the eager efforts of hospitals to meet the standards of an "approved" hospital. Such a response is a tribute to its wise judgment and a recognition of its

V 1(
1937

authority. Lest, therefore, there arise a demand from without our ranks for an "approved practitioner," the American Medical Association should of its own initiative study the present situation and take measures to forestall such an eventuality.

MEDICAL MEETINGS

It is evident from the number of medical society meetings at present being held, the excellent attendance reported generally and the great number of medical publications supported by our members, that the majority of the medical profession of this country is alive to the need of continued education and is seeking voluntarily to take advantage of the opportunities presented. It must be admitted, however, that a small percentage does not attend medical meetings and does little to keep up with medical progress. The good name of our profession suffers from such an attitude of even a relatively small group, and here lies a challenge to our organization.

Isolation and the lack of accessibility of meeting places are often valid excuses for much of this nonattendance. To meet this, I would urge a comprehensive study of the traveling postgraduate courses already in operation in some states with the idea of a more general and systematized development of such a plan. From an extensive acquaintanceship with practitioners I am confident that, if such educational opportunities were thus made available at accessible points, the response would be prompt and encouraging. In such efforts, however, there should be careful selection of a well balanced and well presented program, considerations too often lost sight of unfortunately in many of our meetings. Highly scientific or technical papers are of great value but should be restricted to audiences that can comprehend them, or couched in language understandable to the average listener, and with an emphasis on the application to medical practice. In all meetings, whether of the suggested traveling postgraduate or the regular county, state or national societies, more definite consideration should be given to the majority of the attending audience in arranging programs and in the method of presentation to the end that the programs may be more attractive and that the greatest good may be gained by the greatest number.

In this the American Medical Association may assume a scheme of leadership and guidance that will demonstrate that it has a definite plan of medical education not only for the undergraduate and the intern but also for all its members throughout their entire period of medical life expectancy. The result will be a better profession, a more united front with better service to the public and a greater progress of medical science. With such a scheme of activity in these days of medical and economic unrest, our medical conscience may be reassured and all may take hope that American medicine will show to the world the highest standards of medical science and medical practice.

And so may be fulfilled that whimsical dream of William Osler as recounted in his "Vienna Revisited" in THE JOURNAL of May 9, 1908. He pictured a fancied interview with Minerva Medica; how she fled because of changing conditions from Greece to Italy, to France, Holland and Germany, and, when he invited her to cross the Atlantic and set up here her temple, she replied: "Give me the temples, give me the priests, give me the true worship, the old Hippocratic service of the art and of the science of ministering to man, and I will come. By the eternal laws under which we gods live I would have to come. I did not wish to leave Paris, where I was so happy and where I was served so faithfully by Bichat, by Laënnec and by Louis"—and tears filled her eyes and her voice trembled with emotion—"but where the worshippers are the most devoted, not, mark you, where they are most numerous; where the clouds of incense rise highest, there must my chief temple be, and to it from all quarters will the faithful flock. As it was in Greece, in Alexandria, in Rome, in northern Italy, in France, so it is now [or was] in Germany, and so it may be in the new world I long to see."

PROFESSIONAL FREEDOM AND SOCIAL RESPONSIBILITY

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In every age and in every cultural order, the doctor has existed and maintained himself in spite of war, catastrophes and revolution. He lived and practiced his art during the decline and fall or even the complete annihilation of previously existing states of civilization. From remote times the doctor has enjoyed complete professional freedom and has thereby assumed great social responsibility.

Through the centuries, fundamental discoveries made by practicing physicians have changed the whole current of life. Vaccination against smallpox, the discovery of the bacterial causes of disease, the development of the stethoscope, the cystoscope and other instruments of precision and the x-rays, the discovery of the specific effects of certain medicaments, such as vitamin therapy in deficiency diseases, liver therapy in anemias, and insulin in diabetes, have all given to many human beings increased years of greater usefulness. These discoveries were made by physicians without any monetary remuneration or any expectation of personal advantage. These significant contributions have made possible a lessening of disease, increased longevity and incalculable relief from suffering. Humanity has benefited probably more from the contributions of physicians than it has through the mastery of man's environment by the discoveries in the physical sciences. Humanity has benefited in a social sense more by the work of physicians than it has by inventions in government.

Mass methods in medical practice are definitely approaching an end. Certain diseases, such as typhoid, diphtheria, syphilis and malaria, lend themselves to mass control by the sanitary engineer and technician. But the practitioner of medicine in the future will be employed largely in a more personal relationship to disease. We are slowly developing a society in which old age with its degenerative conditions will represent a constantly increasing percentage of disease. The United States by 1960 may have a stationary population, and the leading causes of death and physical disability will be in the degenerative group of disease. One out of four or five of the population will be over 60 years of age, and heart disease, cancer, nephritis, pneumonia, accidents and apoplexy will move up as the chief causes of death. Medical practice will require a more personal service, a more extensive control, and, I believe, will require more physicians to take care of them.

Address of the retiring President delivered before the American Medical Association at the Eighty-Eighth Annual Session, Atlantic City, N. J., June 8, 1937. Dr. Charles Gordon Heyd succeeded Dr. James Tate Mason, who died June 20, 1936.

Largely by reason of our individualism and the fact that we explored and developed a virgin continent with the spirit of the pioneer, the United States has had a better health record than obtains anywhere else in the world. The final analysis of the social intelligence of a people will rest on their health program. Wherever we survey a typical death-producing disease and its effect on the community, we find that the record of the United States is superior to that in countries with either a socialized medical system or compulsory health insurance. The final appraisal of our national well being will rest on mortality statistics.

There are certain portions of the United States where it is impossible under present conditions to provide any fair degree of medical service. Until the levels of these backward areas are elevated culturally, physically and intellectually by more education, by proper housing, by adequate nourishment, by better protection against climatic and endemic disease, it will be futile to expect a medical service comparable to that in the most intelligent, advanced and socially minded states of the Union. In certain areas less than 10 cents per capita is spent annually on public health, as compared to $2.85 per capita annually in our more advanced states. A single example will suffice: Until the diet of certain groups of people has been brought up to a vitamin maintenance level by increasing their earning capacity and by education, it would be foolish to talk about adequate medical and dental services.

What a fallacy! To assume that all the people at all times, under all conditions, can receive what is so glibly spoken of as "adequate medical service" or even as the "best of medical care." It is impossible to make people of ordinary average intelligence look after themselves. It is notorious that there is more delayed medical attention among employees and nonprofessional staffs of hospitals than those outside the hospital field. What a flight from reality to suppose that we can make any effective inroads on the recalcitrance of human nature when we have 16,000 chiropractors, 7,600 osteopaths, 2,500 naturopaths and 10,000 Christian science healers taking $125,000,000 a year from the American people for unscientific or one track systems of healing.

America is confronted with the following social conditions: increase in population, a tremendous increase in the number of highly educated citizens, an increasing mechanization of life with urban condensation, a shift from the agrarian to the industrial form of life, gigantism in industry and hospitalization, a change in the concept of government and finally the political power of masses.

Increased morbidity, with more hospital days, is the inevitable consequence of assuming a compulsory health insurance scheme. It is impossible to set up any state system of medicine or compulsory health insurance without creating a class of bureaucrats whose self interest maintains them in office. These possess the poisonous virus of all bureaucracies—an insatiable desire for increased power. The maintenance of this bureaucratic personnel is a permanent obligation of society in good times and in bad times. There follows from above downward a diminishing spiral of effectiveness: (1) the bureaucracy that administers the scheme, (2) the patient who receives the services and (3) the doctors who render the service. More and more of the tax dollar goes to the upper segment and less to the lower. The constantly increasing cost of administration is offset by less and less service to the patients, decreasing remuneration to the physicians and a rapid continuous deterioration in the quality of medical services.

Modern medicine may be divided into two major domains: one is the scientific phase represented by the utilization of all discoveries that can be applied to the alleviation of human suffering or the banishment of disease. These discoveries in medical science have been made throughout time but reached their most startling importance in the last fifty years, when man obtained the mastery over his environment by discoveries in the field of physical science.

The second aspect of medical practice is that scientific data must be correlated, applied and distributed. This is the art of practice and in it there is a surprising difference in abilities and in technic. It is said that Jenner was not a noteworthy physician, yet he gave humanity an epochal discovery. Robert Koch was an indifferent therapist but became a scientist with the discovery of the bacterial origin of disease.

There is today a large bulk of scientific medical measures that must wait until the level of intelligence of the people is prepared to accept them. As indicating the tremendous gap between scientific accomplishment and its clinical application, one may recall that there were "not half a dozen clinical thermometers employed in the largest Union army throughout the Civil War"; yet this was 250 years after the discovery of a means of recording changes in temperature.

In 1905 Schaudin discovered Spirochaeta pallida and in 1906 Wassermann introduced the serum diagnosis of syphilis; in 1910 Ehrlich and Hata discovered arsphenamine; yet only in 1937 has the word "syphilis" been permitted on the radio. The eradication of syphilis has been possible during the past twenty-five years.

The quality of medical services depends on medical education. Medicine has evolved in the United States in the last 150 years from the circuit rider with saddle bag, through the preceptor stage, to the medical school with its premedical requirements. Conspicuous in the advancement of medical standards has been the Council on Medical Education and Hospitals of the American Medical Association, which began in 1905. It has led in the development of a public sentiment for the eradication of the proprietary and incompetent medical schools and an increase in premedical education. It has inspected medical schools and hospitals and approved the latter for interns and residence appointments. It has created a mechanism for approving boards to certify to the competence of specialists.

In response to the needs of the time, the American Medical Association is to make a survey and coordinate all the graduate and postgraduate facilities of the United States so that these in turn may be the means of increasing the qualifications of physicians for more effective and better medical service to the community.

The quality of all social services rests primarily on character, and the relationship of the doctor to the community is based on the ethics of the medical profession. Critics of medical organization sardonically suggest that the Code of Ethics is to protect the so-called vested rights of the physician in sickness. Nothing is more erroneous. The Code of Ethics is for the protection and benefit of the public.

Medicine has the properties of a living organism. It is dynamic and evolves with the spirit of the times. Every society throughout history has formulated an ideal of medical service. From about 1800, medicine changed from its disparate existence and became a responsible mechanism of society. One may hopefully

V 10
1937

anticipate that in this country there shall emerge a progressively advancing type of medical education and medical services which may be called the American system. The science of medicine and the art of medical practice must retain its freedom and professional liberty. The medical profession "does not rely on endowment but on its own exertions directed to meeting human wants. There is no great profession which has so little to say to the public purse and which so moderately and modestly dips its hand into that purse. It is not only in the interest of the public, but of the profession itself, that it is eminently self supporting. Rely upon it: the principle of self support does much to maintain its honor and independence, and to enable it to pursue its stately march in the times that have come and in the times that are coming, to form its own convictions, to act upon its own principles without fear or favor, for the general benefit of mankind."

THE INCIDENCE OF TRICHOMONADS IN THE VAGINA, MOUTH AND RECTUM

EVIDENCE THAT VAGINAL TRICHOMONADS DO NOT ORIGINATE IN THE MOUTH OR INTESTINE

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Until it has been definitely proved whether or not trichomonads from one source may survive and multiply in other organs, the possibility of auto-infestation remains an important factor in the prevention and treatment of trichomonad infestations, especially the common clinical entity trichomonas vaginitis. The probability of autotransmission depends, however, on the incidence of the organisms in the suspected foci, while the percentage of multiple infestations may be considered as an indication of the extent to which it has occurred. Although the incidence of Trichomonas has been reported by a number of workers, we are not aware of studies of the incidence of trichomonads from these three sources in any one group of individuals.

In the present investigation such a study was undertaken among a group of 200 women. All the available laboratory methods of diagnosis, including examination of the fresh specimen by wet smear and stained preparations as well as culture methods, were employed and their relative efficacy noted. Cultural differences indicating pertinent physiologic distinctions among the trichomonads from human hosts are also described.

MATERIALS AND METHODS

One hundred consecutive white and an equal number of colored women attending the antepartum and postpartum clinics of the department of obstetrics at Jefferson Medical College Hospital were studied for the presence of vaginal, intestinal and buccal trichomonads. The technic employed for the collection of material for examination was as follows:

1. *Vaginal Specimens.*—With the patient in the dorsal position the vaginal tract was exposed by means of a bivalve speculum. A copious sample of the vaginal secretion was collected on a sterile cotton swab and dropped into a test tube containing 2 cc. of sterile Ringer's solution. Only those patients were included in this study who had received no douches or other local vaginal treatment for at least a month prior to the present examination.

2. *Intestinal Specimens.*—Wherever possible a fresh specimen of feces was collected by digital manipulation. The gloved forefinger, lubricated with a small amount of sterile petrolatum, was introduced well into the rectum and with it a small mass of feces was separated from the formed stool and gently worked past the external sphincter to be collected in a test tube containing 5 cc. of Ringer's solution. In thirty-eight instances in which a satisfactory specimen could not be obtained in this manner it was found necessary at a subsequent visit to have the patient defecate in a special cardboard container provided for the purpose.

3. *Buccal Specimens.*—A sterile cotton swab was thoroughly rubbed over the inner and outer surfaces of the entire upper and lower gum lines and into any cavities that were present. This swab was then dropped into a tube containing 2 cc. of sterile Ringer's solution.

All three specimens were taken to the laboratory immediately after their collection, and examinations by the following methods were conducted without delay:

A. Examination of Fresh Material: The specimens were well emulsified in the Ringer's solution and a copious sample was carried onto a glass slip by means of a cotton applicator. The slides were thoroughly examined under the low and high dry objectives for the presence of trichomonads.

B. Examination of Fixed and Stained Preparations: Several smears of each specimen were prepared on cover slips, fixed for fifteen minutes in warmed Schaudinn's fluid with 10 per cent acetic acid and stained by the iron hematoxylin method. At least two slides from each specimen were examined for a total of ten minutes under the oil immersion objective for the presence of trichomonads.

C. Examination by Culture Methods: Although a number of mediums have been recommended for the cultivation of the various trichomonads, it was decided for the purposes of this study to employ a medium that has given general satisfaction for the growth of trichomonads from all three sources studied; namely, 0.4 per cent Loeffler's dehydrated blood serum in modified Ringer's solution (sodium chloride 6 Gm., potassium chloride 0.1 Gm., sodium bicarbonate 0.1 Gm., calcium chloride 0.1 Gm., distilled water 1,000 cc.). Two cultures from each specimen were prepared, each containing 0.5 cc. of the emulsified material in 10 cc. of culture medium. One tube was incubated at room temperature and another at 37.5 C. Cultures were examined daily for at least four consecutive days. When positive cultures persisted only at incubator temperature, their ultimate cultivability at room temperature was determined by repeated subcultures from positive incubator tubes.

RESULTS

The total incidence of trichomonads of vaginal, buccal and intestinal origin (Trichomonas vaginalis, T. buccalis and T. hominis, respectively) is given in table 1, as well as the incidence obtained by each of the three methods of study employed; namely, fresh wet smear examination, stained smears and culture methods.

From the Department of Obstetrics, Jefferson Medical College Hospital.

Prof. David H. Wenrich of the Department of Protozoology at the University of Pennsylvania showed constant interest and gave numerous helpful suggestions during the course of this study.

It will be noted that the total incidence of the vaginal trichomonads (23.5 per cent) is approximately one and a half times as great as that of Trichomonas buccalis (16.5 per cent) but almost sixteen times as great as that for the intestinal form (1.5 per cent). The incidence of Trichomonas vaginalis in colored patients in this study was almost twice as great as that for the white patients, while the incidence of the buccal trichomonads was only slightly higher in the colored group.

TABLE 1.—*Incidence of Vaginal, Buccal and Intestinal Trichomonads*

Source	Positive in Wet Smears	Positive in Stained Smears	Positive in Culture	Total Incidence: Entire Group	Total Incidence: White Women	Total Incidence: Colored Women
Vagina	47, or 23.5%	31, or 15.5%	32, or 16.0%	47, or 23.5%	17.0%	30.0%
Mouth	3, or 1.5%	None	33, or 16.5%	33, or 16.5%	13.0%	18.0%
Rectum	2, or 1.0%	1, or 0.5%	3, or 1.5%	3, or 1.5%	1.0%	2.0%

TABLE 2.—*Repeated Studies of Three Patients with Intestinal Trichomonads*

Patient	Period of Study, Weeks	Specimens Examined	Positive in Wet Smear	Positive in Stained Smears	Positive in Culture
1	42	12	7	1	11
2	18	9	9	4	9
3	8	4	2	1	4

The total incidence, as determined by a combination of the three forms of laboratory study, did not exceed the incidence as determined by some one of the three methods alone; however, the most efficient method was not the same for the material from the three different sources. Thus, in the case of the vaginal trichomonads the number of positive results determined by the examination of fresh wet smear preparations equaled the number determined by the combination of methods, whereas in the specimens from the mouth and rectum the total number of positive results was determined by the culture methods alone.

The small percentage (1.5) of positive buccal wet smears is indicative of the small numbers of organisms that are generally found in the infested mouth and is further reflected by the fact that none were found on the prepared slides. The easy cultivability of Trichomonas buccalis, however, indicates that infestation is present in more than ten times the number of cases in which wet smear preparations alone would lead one to suspect their presence (table 1). On the other hand, the concentration of trichomonads in the infested vagina is usually sufficiently great to make the diagnosis by the wet smear method the most efficient, especially in view of their difficult cultivability. The active motility of trichomonads in fresh preparations is a further factor in accounting for the superiority of the fresh smear method over stained preparations, together with the fact that trichomonads are especially difficult to fix and stain properly.

In the examination of the fecal specimens for trichomonads the culture method gave the highest percentage of positives (three, or 1.5 per cent). In the two instances in which the organisms were seen in the wet smears they were present in large numbers in one instance but were very sparse in the other. Although only three cases of intestinal trichomoniasis occurred, repeated examinations indicated not only that the culture method was the most reliable for diagnosis but that the trichomonads persisted throughout the periods of observation, ranging from eight to forty-two weeks (table 2). Permanent slides proved comparatively poor for the diagnosis of intestinal trichomonads, whereas Wenrich, Stabler and Arnett [1] found them to be most efficient for the diagnosis of intestinal amebas.

A study of the multiple incidence of the trichomonads from all three sources (table 3) indicates that the degree of correlation is not greater than would be expected from chance distribution alone. Only one woman was positive for trichomonads from all three sources studied. Nine, or 4.5 per cent, of the group were infested with vaginal and buccal trichomonads. Thus, of the forty-seven patients with Trichomonas vaginalis nine, or 19.1 per cent, harbored T. buccalis, while for the group at large the incidence of the latter form was 16.5 per cent. The patient who harbored all three trichomonads was the only one positive for vaginal and intestinal forms or for buccal and intestinal forms.

The employment of routine culture methods among the present group of 200 women afforded an opportunity for studying the relative cultivability of the three forms of Trichomonas.

It is of interest that, although in thirty-two, or 68.1 per cent, of instances of vaginal trichomoniasis the organisms could be cultivated at 37.5 C., none of these strains persisted at room temperature, nor did subsequent subcultures prepared from good cultures become positive when incubated at room temperature (table 4). Although two cultures at room temperature showed a few organisms after twenty-four hours which were probably survivors from the original inoculum, they could hardly be classified as successful cultures. On the other hand, of the thirty-three strains of Trichomonas buccalis studied all were easily cultivable at incubator temperature; ten strains were recovered from cultures kept at room temperature, while thirty-one were ultimately cultivable at room temperature. All three strains of Trichomonas hominis grew well at 37.5 C., two were also positive in the original tubes at room temperature, while the third was later cultivated at room temperature.

TABLE 3.—*Multiple Incidence of Trichomonas from Vagina, Mouth and Rectum*

Positive for trichomonads from all three sources	1, or 0.5%
Positive for vaginal and buccal trichomonads	9, or 4.5%
Positive for vaginal and intestinal trichomonads	1, or 0.5%
Positive for buccal and intestinal trichomonads	1, or 0.5%

TABLE 4.—*Cultivability of Vaginal, Buccal and Intestinal Trichomonads*

	T. Vaginalis (47 Strains)	T. Buccalis (33 Strains)	T. Hominis (3 Strains)
Original culture positive at 37.5 C.	32, or 68.1%	33, or 100%	3, or 100%
Original culture positive at room temperature	2, or 4.3%*	10, or 33.3%	2, or 66.7%
Ultimately cultivable at room temperature	None	31, of 93.9%	3, or 100%

* A few organisms survived for from twenty-four to forty-eight hours.

1. Wenrich, D. H.; Stabler, R. M., and Arnett, J. H.: Endamoeba Histolytica and Other Intestinal Protozoa in 1,060 College Freshmen, Am. J. Trop. Med. **15**: 331 (May) 1935.

COMMENT

Various opinions are still held concerning the specificity of the vaginal, buccal and intestinal trichomonads in spite of the numerous laboratory and clinical investigations of the problem.

Distinct differences in morphologic characteristics among the three forms have been demonstrated by the careful comparative studies of Wenrich,[2] and more recently by the investigations of Powell.[3] It has been suggested by Andrews,[4] Lynch,[5] Dobell [6] and many others that under similar environmental conditions the species may be identical, apparent distinctions being the result of differences in habitat. Experimental animal inoculations have been advanced by Hegner [7] and by Dobell [6] in support of this contention, while the experiments of Kessel and Gafford [8] and of Bonestell [9] indicate an organ specificity for the trichomonads of human hosts.

On the basis of inoculations into human hosts Karnaky [10] believes that infestation of the vagina may be produced with trichomonads of intestinal and buccal origin and states [11] that these "convert into the vaginal form when transplanted into a trichomonal free vagina," although no criteria or discussion of observations are given to substantiate this statement. We [12] have not been able to confirm Karnaky's results with the intestinal and buccal forms, although we have been able to produce a vaginal infestation with Trichomonas vaginalis from culture.

From a clinical point of view, Trichomonas vaginalis is the most common as well as the most important cause of human infestation by trichomonads, since the leukorrhea and vaginitis with which it is so frequently associated are generally acknowledged to be caused by the flagellate. The opinion has frequently been expressed by clinicians that vaginal infestation has its origin from intestinal or buccal contamination.

This belief has led to the institution of improved hygienic measures, especially with a view to preventing vaginal infestations after initial local treatment. However, the practice of giving drugs by mouth, as suggested by Bradley [13] and Karnaky,[14] or of adjusting gastric acidity, as reported by Bogess,[15] not only has little scientific justification but, when such drugs as arsenicals are given,[13] may be actually dangerous to the patient's health, in addition to removing emphasis from rigorous local treatment. At the very least, examination for intestinal trichomonads should be made before the treatment of a condition which may not exist is undertaken.

It has been demonstrated in the present study in our clinic, where vaginal trichomoniasis is common, intestinal infestation with Trichomonas is rare and even when present is not more frequently associated with vaginal infestation than would be expected from chance distribution. The latter fact is of especial interest because it has been demonstrated that, among the patients harboring Trichomonas hominis, the organisms may be repeatedly demonstrated in the feces over a considerable period of time, thus affording ample opportunity for vaginal infestation to occur. In a study of a large number of oriental women Matsuda [16] also noted that there was no tendency for the patient to be parasitized with intestinal and vaginal trichomonads at the same time. The incidence of intestinal infestation among the 200 patients in the present study is in general agreement with those noted for other groups in this climate. Craig [17] estimates that in temperate regions from 0.5 to 1 per cent of individuals examined harbor Trichomonas hominis. Hegner and Payne,[18] from a review of thirty-five papers by American, English and French investigators including 20,000 cases, estimate the incidence at 3 per cent. Lynch [5] believes the percentage in warmer climates and in patients with gastro-intestinal disturbances is considerably higher.

Vaginal auto-infestation with buccal trichomonads has received considerably less attention than has infestation with the intestinal form, although this possibility has been emphasized by Lynch.[19] On this assumption the much higher incidence of the buccal trichomonads as demonstrated in this study, as well as by Beatman,[20] Hinshaw,[21] Hogue [22] and others, together with the fact that saliva is commonly used in sexual practices, would indicate that this is a considerably more prevalent source of infestation than would be possible from fecal contamination. Further, it has been pointed out by Bland, Wenrich and Goldstein [23] that morphologically Trichomonas vaginalis more closely resembles the buccal form.

From the data of the present study auto-infestation from the buccal source was considered improbable for the following reasons: (*a*) the comparatively low incidence of buccal trichomonads, (*b*) their scant numbers even in positive cases and (*c*) the failure to note any considerable increase in incidence in vaginally infested patients.

It has been generally accepted that cysts or other resistant stages of Trichomonas do not exist and consequently that intestinal infestation requires the successful ingestion and gastric passage of the motile forms. This mode of intestinal infestation has been demonstrated by animal inoculation by Hegner [24] and by

2. Wenrich, D. H.: Morphological Studies on the Trichomonad Flagellates of Man, Archivos de la Sociedad de Biologica de Montevideo, 1931, supplement, part 5.
3. Powell, W. N.: Trichomonas Vaginalis Donné 1836: Its Morphological Characteristics, Mitosis and Specific Identity, Am. J. Hyg. **24:** 145 (July) 1936.
4. Andrews, M. N.: Observations on Trichomonas Vaginalis Donné 1837, with Particular Reference to Its Incidence in England and Its Cultivation, J. Trop. Med. **32:** 237 (Sept. 2) 1929.
5. Lynch, K. M.: Protozoan Parasitism of the Alimentary Tract, New York, Macmillan Company, 1930.
6. Dobell, Clifford: Researches on the Intestinal Protozoa of Monkeys and Man, Parasitology **26:** 531 (Oct.) 1934.
7. Hegner, Robert: Infections of the Vagina of Rhesus Monkeys with Trichomonas Hominis from Man, J. Parasitol. **20:** 247 (June) 1934.
8. Kessel, J. F., and Gafford, J. A.: Trichomonas Vaginitis, J. Parasitol. **20:** 330 (Dec.) 1934.
9. Bonestell, Aileen E.: Inoculation Experiments with Trichomonas Hominis, T. Buccalis and T. Vaginalis, J. Parasitol. **22:** 511 (Oct.) 1936.
10. Karnaky, K. J.: Trichomonas Vaginitis, Urol. & Cutan. Rev. **38:** 174 (March) 1934.
11. Karnaky, K. J.: A New and Improved Method of Treatment for Trichomonas Vaginalis and Other Pathological Conditions of the Vagina, M. Rec. & Ann., May 1936.
12. Bland, P. B., and Rakoff, A. E.: Inoculations with Trichomonas in Human Hosts, read before the eastern branch of the American Society of Bacteriologists in February 1935.
13. Bradley, R. J.: The Treatment of Trichomonas Vaginitis, M. Rec. & Ann. **29:** 585, 1935.
14. Karnaky, K. J., in discussion on Bradley.[13]
15. Bogess, J. W., Jr.: Hypochlorhydria and Achlorhydria in Relation to Recurrent Trichomonas Vaginalis Vaginitis, M. Rec. **143:** 112 (Feb. 5) 1936.
16. Matsuda, Kazuhiko: Studies on Trichomonas Vaginalis: Distribution of T. Vaginalis Among Japanese, Koreans and Manchurians in Darien, J. Orient. Med. (Abstr. Sec.) **24:** 35 (March) 1936.
17. Craig, C. F.: A Manual of the Parasitic Protozoa of Man, Philadelphia, J. B. Lippincott Company, 1926.
18. Hegner, R. W., and Payne, G. C.: Surveys of the Intestinal Protozoa of Man in Health and Disease, Sc. Monthly **12:** 47, 1921.
19. Lynch, K. M.: Trichomonas of the Vagina and Mouth, Am. J. Trop. Dis. & Prev. Med. **2:** 627, 1915.
20. Beatman, L. H.: Studies on Trichomonas Buccalis, J. Dent. Research, **13:** 339 (Oct.) 1933.
21. Hinshaw, H. C.: Correlation of Protozoa of Human Mouth with Extent of Certain Lesions in Pyorrhea Alveolaris, Proc. Soc. Exper. Biol. & Med. **24:** 71 (Oct.) 1926.
22. Hogue, M. J.: Studies on Trichomonas Buccalis, Am. J. Trop. Med. **6:** 75 (Jan.) 1926.
23. Bland, P. B.; Wenrich, D. H., and Goldstein, Leo: Trichomonas Vaginitis in Pregnancy, Surg., Gynec. & Obst. **53:** 759 (Dec.) 1931.
24. Hegner, R. W.: Infection Experiments with Trichomonas, Am. J. Hyg. **4:** 143 (March) 1924.

Wenrich and Yanoff.[25] If successful transference of Trichomonas from one source to another is possible, an incidence of intestinal infestation many times lower than buccal trichomoniasis in the same group of patients, as obtained in this study, remains to be explained.

The investigation of the incidence of the flagellates by cultural methods as well as by the direct examination of the specimen by wet smear and stained preparations has amply demonstrated that the highest percentage of infestation is dependent on the method of diagnosis. However, it has been our experience that the culture method alone will reveal buccal and intestinal trichomonads as frequently as will the combined methods, while wet smear examination alone will determine the total incidence of vaginal infestation.

Although good cultures of all three forms of Trichomonas have been obtained in various mediums by a number of workers, few reports on the cultivability at room temperature are available. Das Gupta [26] cultivated twenty-three strains of intestinal trichomonads in Reno's medium; he was not able to obtain positive cultures at 22 C. or lower. Kofoid and Swezy,[27] on the other hand, cultivated Pentatrichomonas from feces in 10 per cent serum in Locke's solution with facility at room temperature. Trichomonas buccalis was cultivated by Hogue [22] at 26 C. and 30 C. as well as at body temperature. Andrews [4] found that Trichomonas vaginalis did not grow at 28 C.

The cultural differences of the vaginal trichomonads as compared with the other two forms, especially the inability to obtain successful cultures of Trichomonas vaginalis at room temperature, indicates physiologic differences among the three forms. Indeed, it may be stated with some degree of certainty that a trichomonad from a human source which can be cultivated and maintained at room temperature is not of vaginal origin.

SUMMARY

1. Our study of the incidence of Trichomonas from the vagina, mouth and rectum of 200 women employed wet smears, stained slides and culture methods.

2. Vaginal infestation with Trichomonas was common, occurring in 23.5 per cent of the group. Buccal infestation occurred in 16.5 per cent of the patients, while intestinal trichomoniasis was comparatively rare, being present in only 1.5 per cent of the women.

3. It was demonstrated that the wet smear method is the most efficient for the diagnosis of Trichomonas vaginalis, while the culture method was much superior for the detection of the intestinal and buccal trichomonads.

4. Women harboring vaginal trichomonads did not show an appreciably higher percentage of buccal or intestinal trichomonads than was noted for the group at large. Only one woman (0.5 per cent) harbored all three organisms.

5. Rectal contamination was regarded as an improbable source of vaginal infestation in view of the rarity of intestinal trichomoniasis among women with Trichomonas vaginitis.

6. Of three patients harboring intestinal trichomonads, only one was positive for Trichomonas vaginalis despite the fact that the flagellates could be regularly demonstrated in the feces over long periods of time.

7. Auto-infestation with buccal trichomonads was also considered an unlikely source of vaginal infestation because the dual incidence of these organisms was not more than would be expected from chance distribution.

8. A comparison of the incidence of trichomonads from the bowel and mouth indicates that intestinal infestation probably does not result from ingestion of the buccal forms.

9. Unlike the intestinal and buccal trichomonads, Trichomonas vaginalis was not cultivable at room temperature and was considered physiologically different.

1621 Spruce Street.

25. Wenrich, D. H., and Yanoff, J.: Results of Feeding Active Trichomonad Flagellates to Rats, Am. J. Hyg. **7**: 119 (March) 1927.

26. Das Gupta, B. M.: On a Species of Trichomonas Prevalent in Calcutta, Indian M. Gaz. **61**: 10 (Jan.) 1926.

27. Kofoid, C. A., and Swezy, Olive: On the Morphology and Behavior of Pentatrichomonas Ardin Delteili (Derrieu and Raynaud), University of California publication in zoology **20**: 373, 1923.

DIABETES MELLITUS

REPORT OF A CASE RESISTANT TO INSULIN BUT RESPONSIVE TO A CHANGE IN THE TYPE OF CARBOHYDRATE FED

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Since the introduction of insulin, cases have appeared from time to time that showed most of the symptoms and signs of diabetes mellitus but did not respond to insulin. The physiologic explanation behind most of these conditions is still obscure. For this reason we are reporting the following case, which was insulin resistant but did respond to a change in the type of monosaccharide derived from the food:

H. W., a white boy, aged 25 months, was admitted to Babies Hospital July 11, 1935, for malnutrition and glycosuria. The family history was irrelevant. The patient had had repeated respiratory infections with otitis media and one attack of bronchopneumonia. He was small at birth and gained very slowly in spite of adequate amounts of food and vitamins. The weights were: at birth 4 pounds 14 ounces (2,213 Gm.); at one year 12 pounds (5,443 Gm.); at eighteen months 13½ pounds (6,123 Gm.); at 25 months 15¼ pounds (6,917 Gm.). Sugar was discovered in the urine in October 1934, when he was 18 months old. Until March 1935 an unsuccessful attempt was made to control the glycosuria by regulating the diet. From then until admission, insulin was used in increasing amounts, up to 60 units a day, without controlling the glycosuria.

He was a small infant with thin legs and arms and a protuberant, tense abdomen. He was 40 per cent under weight and considerably under height for his age. There was more than the normal quantity of hair on his trunk and extremities. There was a yellowish pigmentation of the palms and soles and small areas on the arms and legs. All the deciduous teeth were erupted but they were malformed, carious and irregularly placed. The genitals were large and more adult in type than is usual at 2 years. The liver and spleen were both palpable 2 cm. below the costal margin. He could sit up but could not stand. He was moderately anemic. The Kahn reaction was negative. An increased sugar was the only abnormality in the blood chemistry. The urine showed from 0 to 8 per cent sugar, from 1.018 to 1.045 specific gravity, from 0 to 4 plus nitroprusside and ferric chloride tests, and a faint trace of albumin.

METHODS

Total blood sugars and the nonfermentable fraction were determined as follows: After precipitation of the proteins in the blood with tungstic acid, as suggested by Peters and Van

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A preliminary report of this case was given at the meeting of the American Pediatric Society at Bolton Landing, June 12, 1936. Abstract published in the American Journal of Diseases of Children **52**: 1263 (Nov.) 1936.

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Slyke,[1] total blood sugars were determined on the filtrate by Benedict's[2] method. This method "determines nonfermentable substances equivalent in reducing power to only 4 to 8 mg. of glucose per 100 cc. blood."[3] Somogyi's[4] method was used in the preparation of the yeast suspension. Since many low values were encountered in the nonfermentable fraction, the concentration of blood and tungstic acid was doubled and this filtrate was fermented for fifteen minutes at room temperature. The fermentable fraction was determined by difference.

Respiratory quotients were determined by the chamber method as follows: Air was blown through the chamber at such a rate that after the patient had been inside for thirty minutes the carbon dioxide content of the air leaving the chamber was less than 1.7 per cent, generally about 1 per cent. Air leaving the chamber was collected in a spirometer for a period of ten minutes after the patient had rested in the chamber for thirty minutes. Duplicate analyses were made of this "expired air" by Carpenter's[5] method. With the same technic respiratory quotients of alcohol were determined to be 0.667. Frequent analyses of outdoor air gave 0.033 per cent for carbon dioxide and 20.940 for oxygen.

CARBOHYDRATE STUDIES

On a diet that contained 90 Gm. of carbohydrate, 45 Gm. of protein and 50 Gm. of fat, he excreted about 25 Gm. of sugar a day, regardless of the insulin dosage—even when this was

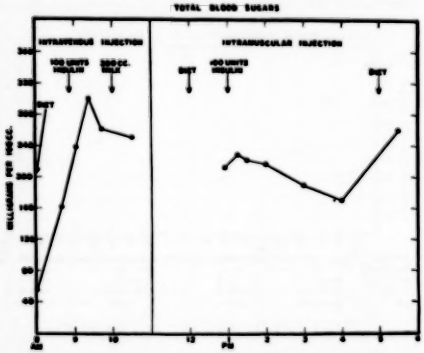

Chart 1.—The effect of 100 units of insulin on the blood sugar.

90 units a day. The fasting blood sugar was always low, varying from 50 to 75 mg. per hundred cubic centimeters. After breakfast the blood sugar rose promptly to an abnormal height, where it stayed until about two hours after supper, when it began to fall steadily. After smaller amounts of insulin had been tried without effect, he was given 100 units of insulin intramuscularly one hour after a mixed meal. As this had no apparent effect on the blood sugar curve, he was given on another day 100 units of insulin intravenously one hour after a mixed meal (chart 1). Again the blood sugar curve showed no apparent effect from the insulin. These results, the low fasting blood sugar and the lack of response to insulin, made it quite certain that the condition was not ordinary diabetes due to pancreatic insufficiency.

Dr. G. L. Foster positively identified the urinary sugar as dextrose. His observations were as follows: 1. Concentration of sugar (as dextrose) by the Shaffer-Hartmann method was 4.84 per cent. Concentration of sugar (as dextrose) by polariscope was 4.68 per cent. 2. Reduction after treatment with yeast was nil. 3. The employment of phenylhydrazine gave nothing but phenylglucosazone.

To test the patient's ability to metabolize the three important monosaccharides we fed him a diet which contained 97 Gm. of carbohydrate, 10 Gm. of protein and 70 Gm. of fat. One day 90 Gm. of the carbohydrate was dextrose, another day levulose and a third day galactose. The urine excreted between

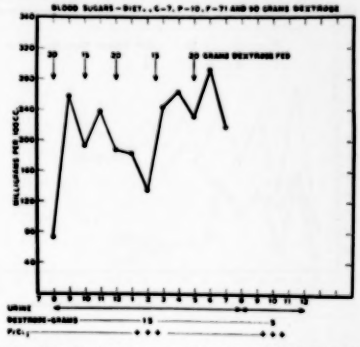

Chart 2.—The blood sugar curve when the carbohydrate in the diet was largely dextrose.

8 a. m. and midnight contained on the dextrose day 20 Gm. of sugar but on the levulose day only 2.3 Gm. of sugar. The urine excreted between 8 a. m. and 8 p. m. on the galactose day contained 4.4 Gm. of sugar, of which 2.3 Gm. was dextrose and 2.1 Gm. galactose. The fasting blood sugar was low on all three days. On the dextrose day (chart 2) it rose promptly after breakfast to an abnormal height and stayed well above the renal threshold most of the time until evening. On the levulose day (chart 3) the blood sugar stayed below 120 mg. per hundred cubic centimeters the entire morning but was

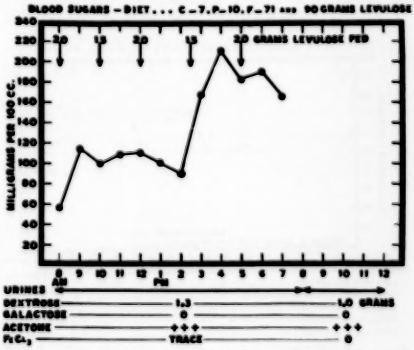

Chart 3.—The blood sugar curve when the carbohydrate in the diet was largely levulose.

over 160 mg. per hundred cubic centimeters from 3 to 7 p. m. On the galactose day (chart 4) the total blood sugar was high throughout the morning owing to the presence in the blood of large amounts of galactose, but the blood dextrose remained within normal limits until afternoon, when it showed a tendency to rise. These results indicated that the patient could metabolize levulose and galactose much better than dextrose.

In order to be sure that he could convert and store the dextrose producing fractions of protein and fat in a normal

1. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry: II. Methods, Baltimore, Williams & Wilkins Company, 1932, p. 461.
2. Benedict, S. R.: The Analysis of Whole Blood: II. The Determination of Sugar and Saccharoids (Nonfermentable Copper-Reducing Substances), J. Biol. Chem. **22**: 141 (June) 1931.
3. Peters and Van Slyke,[1] p. 457.
4. Somogyi, Michael: Reducing Nonsugars and True Sugar in Human Blood, J. Biol. Chem. **75**: 33 (Oct.) 1927.
5. Carpenter, T. M.; Fox, E. L., and Sereque, A. F.: The Carpenter Form of the Haldane Gas Analysis Apparatus: Changes Made in the Apparatus and Details Regarding Its Use, J. Biol. Chem. **83**: 211 (July) 1929.

manner we fed him a high protein diet (carbohydrate 3 Gm., fat 58 Gm., protein 120 Gm.) one day. All the blood sugar determinations were well within normal limits on this day but they showed the same tendency to rise in the afternoon as on the levulose and galactose days (chart 5). The twenty-four hour urine contained 12 Gm. of nitrogen. Thus he may be presumed to have metabolized at least 75 Gm. of protein out of

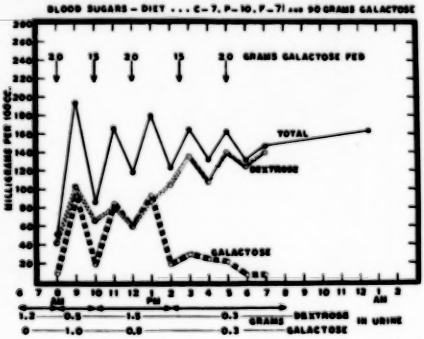

Chart 4.—The blood sugar curve when the carbohydrate in the diet was largely galactose.

the 120 Gm. received. This amount of protein can furnish 43 Gm. of dextrose. Of this only 2 Gm. was excreted. On the fat day he received carbohydrate 7 Gm., fat 71 Gm. and protein 10 Gm. The blood sugar scarcely rose above the fasting level all day (chart 6). The urine contained no sugar on this day. These results suggested that the patient could metabolize the sugar producing fractions of protein and fat normally.

Respiratory quotients were determined under different conditions in an effort to learn whether the patient gave evidence of ability to burn dextrose. The fasting respiratory quotient was always low, 0.79 on four different days. After the ingestion of a mixed meal or 90 Gm. of dextrose in divided doses, 30 Gm. every two hours, it rose to 0.85. After he took 90 Gm. of

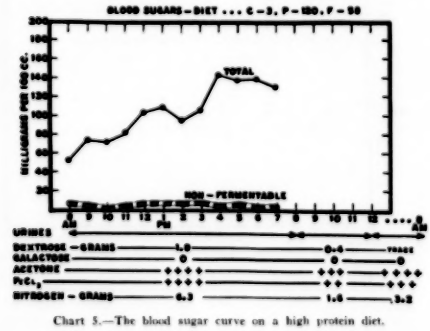

Chart 5.—The blood sugar curve on a high protein diet.

sucrose in divided doses, 30 Gm. every two hours, the respiratory quotient was 0.91 (chart 7). No insulin was given before or during the dextrose or sucrose tests. Thus there would seem to be no reason to question his ability to burn a fair percentage of sugar without the aid of added insulin.

Dextrose, levulose and galactose tolerance curves were normal when 13 Gm. (1.75 Gm. per kilogram) was fed. However, the total blood sugar rose to abnormal heights after feeding 25 Gm. of these sugars (chart 8), but it returned to the previous level faster after levulose and galactose than after dextrose. All galactose had disappeared from the peripheral blood in three hours. This would indicate that the liver was able to convert and store galactose normally. We did not determine the amount of levulose in the blood, but the fact that the total blood sugar was back to the fasting level in three hours would indicate that the liver could convert and store levulose normally.

Five minims of a 1:1,000 solution of epinephrine caused a rise in blood sugar. The amount of rise depended on which sugar had been fed before the epinephrine was given. When given three hours after the ingestion of 25 Gm. of levulose or galactose it caused an immediate response with an increase in blood sugar of over 100 per cent. Three hours after dextrose the increase in blood sugar was less than 50 per cent and its duration was short. These observations suggested that the glycogen content of the liver was larger after the ingestion of levulose or galactose than after the ingestion of dextrose.

Ten units of insulin given three hours after epinephrine and six hours after the ingestion of 25 Gm. of levulose or galactose, when the blood sugar was about 80 mg. per hundred cubic centimeters and falling, caused only a slight increase in the rate of fall with a leveling off afterward at about 40 mg. per hundred cubic centimeters. After 25 Gm. of dextrose the effect was the same except that there was a slight temporary rise in blood sugar from thirty to forty-five minutes after the insulin was given. Some months later ten units of insulin given three hours after the ingestion of 25 Gm. of levulose, galactose or

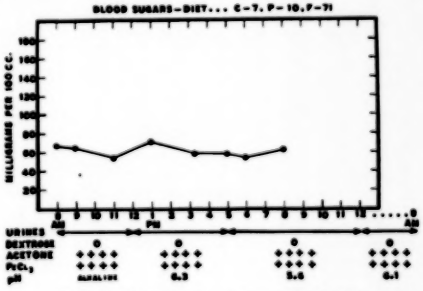

Chart 6.—The blood sugar curve on a high fat diet.

dextrose, when the blood sugar was about 60 mg. per hundred cubic centimeters, resulted in a fall of less than 10 mg. in the first fifteen minutes followed by the maintenance of a practically level blood sugar for the next five hours.

While the patient was in the hospital the urine contained ketones most of the time. The amount varied with the diet. The ingestion of large amounts of dextrose or starch had less effect on the excretion of ketones than the ingestion of an equal amount of levulose or galactose, which reduced the ketone excretion markedly.

COMMENT

In brief, the results observed were as follows: A low fasting blood sugar. An abnormal rise in blood sugar and glycosuria following the ingestion of carbohydrate that resulted in the absorption of ordinary amounts of dextrose, while the ingestion of isocaloric amounts of levulose or galactose or large amounts of protein or fat caused much less rise in blood sugar and little or no glycosuria. Little or no response to insulin. A normal reaction to epinephrine, the rise in blood sugar being greater when the patient had ingested levulose or galactose three hours before he received the epinephrine than it was when he had ingested dextrose. A rise in the respiratory quotient after the ingestion of dextrose or sucrose in the absence of injected insulin. At no time did he excrete anything like the total amount of sugar ingested.

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From these observations it is evident that the patient can and does burn a fair percentage of carbohydrate without the help of injected insulin. In fact, injected insulin does not serve to help him in disposing of the excess dextrose received during absorption. He is, however, able to handle excess carbohydrate absorbed as levulose or galactose. This would seem to make it probable that his difficulty is in the storage of dextrose in the liver. If he can store levulose and galactose much more efficiently than dextrose, it would seem necessary to conclude that there must be some difference in the routes which levulose and galactose travel as opposed to dextrose in the process of storage.

In the process of digestion practically all the carbohydrate in the food is hydrolyzed to three hexoses: dextrose, levulose and galactose. These pass into the portal blood and thence to the liver unchanged. Thus three different monosaccharides enter the liver but ordinarily only one, dextrose, is released from the liver and enters the systemic circulation. However, during the absorption of large amounts of levulose or galactose the systemic blood frequently contains these hexoses in considerable amounts.

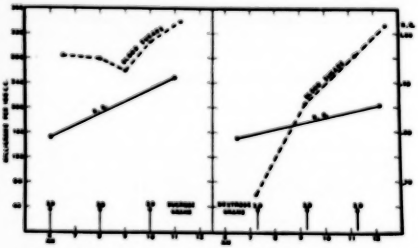

Chart 7.—Respiratory quotients before and after the ingestion of sucrose and dextrose.

Just what happens in the liver to the sugar that enters it as galactose and levulose and ordinarily leaves as dextrose is not known. Three possible routes would seem to be open (chart 9): first, levulose and galactose may be converted to dextrose directly. Then they may be stored as glycogen or excreted as dextrose just as is the sugar that enters the liver as dextrose. Second, levulose and galactose may have to be converted to glycogen first and only after they have undergone this conversion may they be changed to dextrose. Third, levulose and galactose may be first changed to some intermediary product, possibly of the three carbon type. After reaching this stage they may be changed to glycogen for storage or to dextrose for excretion.

If the first route is the true one and levulose and galactose are first changed to dextrose, it seems reasonable to suppose that the same mechanisms must decide whether the dextrose from levulose and galactose shall be stored as glycogen or excreted as dextrose that decide this for the sugar entering the liver as dextrose. Thus all three monosaccharides should behave alike ordinarily. The only exception would be when the liver was unable to convert one of them into dextrose. In this case the unconverted sugar would appear in the blood and the urine.

If the second or third route is the true one, levulose and galactose may behave differently from dextrose because of necessity they must first be changed to glycogen or the intermediate product. As soon as this happens they come under the influence of the mechanism that controls glycogenolysis or the conversion of the intermediary product to dextrose. Dextrose, on the other hand, would escape these controls unless it was changed to glycogen or the intermediate product. That the second or third route is the true one is suggested

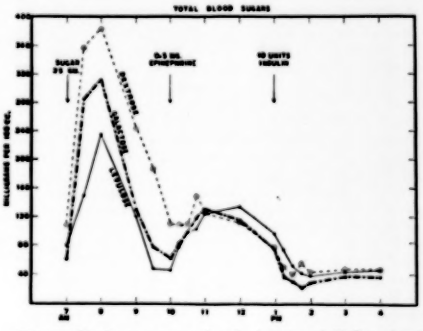

Chart 8.—Blood sugar curves after the ingestion of 25 Gm. of each of the monosaccharides, showing the effect of 0.5 mg. of epinephrine and 10 units of insulin.

by Cori's [6] demonstration that levulose forms glycogen as fast as does dextrose. This would seem to be impossible if levulose were first changed to dextrose.

Our patient can apparently store levulose and galactose in an approximately normal manner but he cannot store dextrose as well. It would seem to us that this

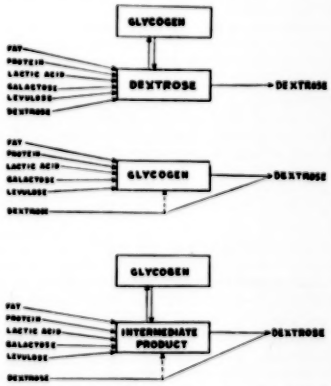

Chart 9.—Diagrams of the three suggested routes of sugar in the liver.

is probably due to his liver's lessened ability to convert dextrose to glycogen or the intermediate product. If this is true it necessitates either the second or third route being the true route. To produce this condition one does not have to suppose that there is anything

6. Cori, C. F.: The Fate of Sugar in the Animal Body: III. The Rate of Glycogen Formation in the Liver of Normal and Insulinized Rats During the Absorption of Glucose, Fructose and Galactose, J. Biol. Chem. **70**: 577 (Oct.) 1926.

wrong with the mechanism controlling glycogenolysis or the conversion of the intermediate product to dextrose.

Besides the three monosaccharides there are other precursors of dextrose entering the liver in varying amounts all the time. These include lactic acid from the tissues, 58 per cent of the amino acids from the food and tissues, and at least 10 per cent of the fat from the food and body stores. Here again there is little absolute knowledge regarding the route traveled from precursor to dextrose but it is generally believed that they all change to glycogen or the intermediary product, first. This belief is supported by the observations in this case. If this is true and all the precursors of dextrose are, of necessity, first changed to glycogen or some intermediate product and can become dextrose only by traveling this route, it follows that after reaching this stage they are all under the control of the glycogenolysis mechanism, or the mechanism for converting the intermediary product to dextrose. Dextrose entering the liver is the only one that may escape this mechanism, and even it comes under the same control if changed to glycogen.

Our conception of the condition in this patient is that of a marked lessening of the liver's ability to change dextrose to glycogen or the hypothetical intermediate product. On an ordinary mixed diet this results in periodic flooding of the tissues with abnormal amounts of dextrose and at the same time keeps the liver's store of glycogen at a low point, for the excess dextrose in the blood stream instead of being stored is promptly excreted, and after this has happened the small store of liver glycogen is called on to keep up the blood sugar until the arrival of the next flood of dextrose. This is certainly not diabetes mellitus in the strict sense, for it is due to a defective liver function rather than a defective pancreatic function.

Now if we are correct in interpreting our evidence to mean that this patient exhibits no other basic physiologic abnormality, all other departures from the normal state being in his case referable to this single fundamental derangement of liver function, our studies may have wider application, for it now becomes reasonable to infer that in normal subjects the precursors of dextrose are not ordinarily converted directly to dextrose by the liver but that before they can become dextrose they must first be changed to glycogen or some intermediary product. The moment this happens they come under the control of the mechanism controlling glycogenolysis or the conversion of the intermediary product to dextrose. This hypothesis would make it highly probable that one of the functions of insulin is to slow or lessen glycogenolysis or the conversion of the intermediary product to dextrose for the sugar in the urine of a diabetic patient is never levulose or galactose but always dextrose.

It is difficult to make up an adequate diet for a small child that does not furnish considerable amounts of dextrose without making the cost prohibitive. The patient was at home from June to September 1936. His diet during this time was composed of milk (lactose is absorbed as equal parts of dextrose and galactose), banana powder (a considerable part of the sugar in which is levulose), meat, green vegetables and vitamins. On this diet he excreted about 10 Gm. of sugar a day. In the three months he gained 2 pounds (907 Gm.), he began to run about and talk freely and his whole outlook on life changed from that of a sick infant to that of a normal child. The relatively rapid gain and marked improvement in his general condition would suggest that the change in diet was along the right direction.

SUMMARY

In a case of glycosuria resistant to insulin the glycosuria could almost be stopped by the substitution of levulose or galactose for dextrose in the diet.

There was evidence to show that the patient was able to burn dextrose freely without the help of injected insulin.

It is suggested that the difficulty is due to a marked lessening of the liver's ability to convert dextrose to glycogen or an intermediary product in this conversion.

If our interpretation of the physiologic disturbance manifested by this patient is correct, it is rendered likely that in normal human subjects the precursors of dextrose are all changed to glycogen or at least undergo some preliminary step of this conversion before they can become dextrose. A further interpretation of the evidence presented is that one of the modes of action of insulin is a retardation of the conversion of glycogen or the intermediate substance to dextrose.

Broadway and One Hundred and Sixty-Seventh Street.

SUBCUTANEOUS EMPHYSEMA IN BRONCHIAL ASTHMA

REPORT OF A CASE

J. B. KIRSNER, M.D.

CHICAGO

Subcutaneous emphysema following trauma is a familiar clinical entity and is frequently seen after puncture of the lung by a fragment of bone in a fracture of a rib, in a bullet or stab wound, or around the point of insertion of the needle in artificial pneumothorax. A similar clinical picture has been described after esophagoscopy,[1] tonsillectomy,[2] extraction of a tooth,[3] parturition,[4] and as a complication of a foreign body in the bronchus.[5] Many articles have reported this interesting complication following pneumonia (Rush, Adkinson and Hardwick,[6] Lucke and Meyer,[7] Sergent, Launay, Poumeau-Delille and Robert,[8] Harris,[9] Jones[10] and Borsarelli,[11] among others). Its occurrence after rupture of a viscus[12] and in glass blowers[13] indicates the wide variety of etiologic factors. Apparently subcutaneous emphysema following bronchial asthma is a rather rare complication. The only case that I have been able to locate in the American literature is that of Kahn,[14] who observed this condition in an 8 year old girl. The two earliest reports have been found in the *British Medical Journal*: Culverly[15] in 1902 described

From the Department of Medicine, Division of Allergy, University of Chicago.

1. Zepper, J.: Deutsche Ztschr. f. Chir. **196**: 223-227, 1926.
2. Baker, L. J.: Canad. M. A. J. **34**: 670-671 (June) 1936.
3. Hanzean, P.: Presse méd. **44**: 417-418 (March 11) 1936.
4. Hulbert, H. F.: New York State J. Med. **36**: 648-649 (April 15) 1936.
5. Clerf, L. H.: Ann. Otol., Rhin. & Laryng. **44**: 364-370 (June) 1935.
6. Rush, H. P.; Adkinson A., and Hardwick, T. E.: Northwest. Med. **30**: 129 (March) 1931.
7. Lucke, B., and Meyer, J.: Am. J. M. Sc. **59**: 417 (March) 1920.
8. Sergent, Launay, Poumeau-Delille and Robert: Bull et. mém. Soc. méd. d. hôp. de Paris **49**: 367-374 (March 27) 1934.
9. Harris, R. R.: U. S. Vet. Bur. Med. **2**: 50-51 (Jan.) 1927.
10. Jones, B. B.: Virginia M. Monthly **59**: 304-305 (Aug.) 1932.
11. Borsarelli, F.: Pediatria d. med. prat. **7**: 24-32 (Jan.) 1932.
12. Korach, S.: Zentralbl. f. Chir. **54**: 2832-2833 (Nov. 5) 1927.
13. Metz, G. A.: Krankheitsforschung **9**: 1-12 (Jan.) 1931.
14. Kahn, J. S.: Subcutaneous Emphysema in a Case of Bronchial Asthma, J. A. M. A. **88**: 1883 (June 11) 1927.
15. Culverly, E. J. C.: Brit. M. J. **2**: 1899, 1902.

the occurrence of subcutaneous emphysema in a youth, aged 17, clearing in four days. Whitby [16] in 1905 reported this complication in a man, aged 25, in whom the emphysema was extensive but responded to morphine and tincture of lobelia. More recently MacDermot's [17] case concerns a man, aged 22, who had asthma due to ragweed pollen for six years. During a paroxysm of dyspnea he felt some pain in the upper part of the chest with the development of subcutaneous emphysema in the tissues of the neck. The asthma subsided with palliative treatment and the emphysema disappeared in five or six days. In 1934 Davidson [18] presented a case of subcutaneous emphysema in a 9 year old girl whose asthma had extended over eight years. This was initiated after a severe coughing spell by sudden sharp pain over the anterior aspect of the left upper portion of the chest. There was extensive subcutaneous infiltration of air into the upper part of the chest and back, both shoulders, both arms as far as the dorsum of the hands, both sides of the neck, and the lower half of the face. There was no pneumothorax or other pathologic condition. The asthma was relieved by ephedrine syrup and recovery was complete in one week. In the foreign literature Pastorino,[19] Kruysveldt,[20] Artagaveytia [21] and Scheltema [22] have reported other cases of subcutaneous emphysema as a complication of bronchial asthma. This case, then, is the tenth of the kind to be reported.

REPORT OF CASE

E. S., a man, aged 38, an animal (bird) caretaker since 1929 in the Department of Zoology at the University of Chicago,

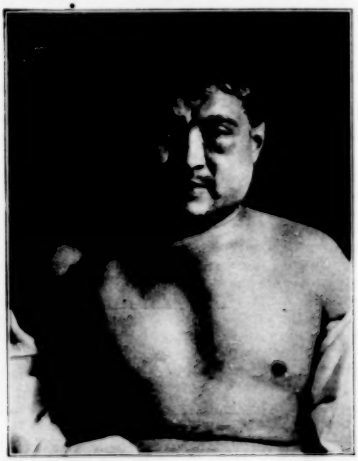

Fig. 1.—One day after admission, illustrating extent of subcutaneous emphysema.

seen in the Allergy Clinic, Aug. 27, 1936, complained of asthma of six days' duration. August 30, while undergoing investigation in the outpatient department, he returned in an acute asthmatic attack; this responded very well to epinephrine and the patient felt well enough to return home. However, the attacks recurred with increasing severity; the same evening a slight swelling in the neck was detected. His condition became worse despite his family physician's care and he entered Billings Memorial Hospital August 31. The patient's past history was negative except for a left inguinal herniorrhaphy and a gunshot wound in the left wrist.

Fig. 2.—Ten days later, demonstrating complete disappearance of subcutaneous emphysema.

At physical examination he was propped up in bed, dyspneic and slightly cyanotic. The face was swollen, especially the left side, with the left eye nearly closed. The swelling covered both anterior and posterior triangles of the neck, extending over the anterior thorax to the level of the fifth intercostal interspace, and posteriorly to the angles of the scapulae. This entire area was crepitant. The apex beat was located 9 cm. from the midsternal line. The heart sounds were regular, with a rate of 82. The pulmonic second sound was greater than the aortic second sound. The blood pressure was 128 systolic and 82 diastolic. Diminished tactile and vocal fremitus with dulness was noted over the left lower lung field. Elsewhere were heard coarse vesicular sounds with typical asthmatic squeaks and whistles. Roentgenograms of the chest demonstrated a large amount of air in both supraclavicular regions and in both axillae, and air in the soft tissues of the neck. No air was seen in the pleural cavities; the trachea was in the midline, the heart was not enlarged and the lung fields were clear except for increased markings at the left base. The emphysema progressed down the anterior wall of the chest and along both arms to the dorsum of the hands. Roentgenograms at this time disclosed infiltration of air into the deep fascia of the neck and separation of the individual muscles from their neighbors; also extension into the mediastinum. An infiltrative lesion of the left lower lobe was noted. It was believed that the origin of the emphysema lay somewhere in the inferior mediastinum.

One day after admission, 300 cc. of air was removed by needle aspiration at a point 2 cm. below the right clavicle and from 4 to 5 cm. from the midline. There was a distinct improvement in the next few days. During this time he received 50 cc. of 50 per cent dextrose intravenously and frequent doses of from 4 to 6 minims (0.25 to 0.37 cc.) of epinephrine (1:1,000) subcutaneously. At one time the patient was seized with an acute gripping precordial pain with acute dyspnea; the blood pressure was 136 systolic and 68 diastolic;

16. Whitby, C. J.: Brit. M. J. **1**:73, 1905.
17. MacDermot, H. E.: Canad. M. A. J. **21**:708 (Dec.) 1929.
18. Davidson, F. C.: Lancet **1**:1230 (June 9) 1934.
19. Pastorino, A.: Rev. de tuberc. d. Uruguay **4**:256-259, 1934.
20. Kruysveldt, C. S.: Nederl. tijdschr. v. geneesk. **77**:5380-5382 (Dec. 2) 1933.
21. Artagaveytia, A., and Zanzi, L. A.: Rev. d. tuberc. d. Uruguay **3**:428-445 (Nov.-Dec.) 1932.
22. Scheltema, M. W.: Geneesk. gids **9**:1076-1079 (Nov. 13) 1931.

an immediate electrocardiogram was normal. This pain gradually abated in several hours and never returned. Eight days after admission the emphysema was noticeably disappearing; the patient's breathing was easier. He was taking fluids by mouth and expectorating large quantities of purulent sputum. The dulness over the left lower lobe was decreasing. His temperature, which had ranged from 100.5 to 104 F., gradually approached normal. Roentgenograms confirmed the diminution of the emphysema but the lesion at the left base was now quite dense and suggested fluid. A laryngoscopic examination was negative. Except for occasional mild pain over the left lower lobe, improvement was steady, and twenty days after admission the patient was discharged well except for slight dulness and slightly diminished breath sounds over the left lower lung field.

Roentgen examination demonstrated that the emphysema had almost entirely cleared save for a small amount of air in the right subclavicular region. There was no change in the lesion at the left base. The right lung was clear. Venous pressures with the direct spinal manometer technic were always normal, except for one occasion when it reached 200 mm. of water during a spasm of especially difficult breathing. The white blood count after having reached 16,100 descended to normal. The urine was normal except for occasional white blood cells. The blood Wassermann and Kahn reactions were negative. About ten days later, x-ray examination demonstrated complete absence of the subcutaneous emphysema; the lesion at the left base had considerably decreased and was believed to represent a localized area of pneumonia. At this time the patient felt very well and physical examination was negative again except for slight dulness at the left base. At a recent check up the patient appeared very well; he had gained 15 pounds (6.8 Kg.) and was symptom free.

RESULTS OF SKIN TESTS

Cutaneous tests to canary, chicken, duck and goose feathers, ragweed pollen and various inhalants were all negative. Similar results were obtained on intradermal testing except for a questionable reaction to chicken feathers and house dust, delayed reactions to catarrhal vaccine and pyrethrum and one plus reaction to ozite.

Material was obtained from the laboratory in which the patient was employed, and testing gave the following results:

Cutaneous tests to chicken feed, chicken mash, floor dust, floor litter (chaff), guinea fowl, hawk, owl and parakeet feathers, pheasant feed, and rowen duck were all negative.

Intradermal tests to floor litter (chaff) +, hawk feather +, chicken mash + +, chicken feed ±, pheasant feather ±, owl feather 0, parakeet feather, diluent —.

ADDENDUM.—The patient was last seen on March 29, 1937, at which time he was in good health, having regained his usual weight of 180 pounds (82 Kg.). Since wearing a mask during his work in the laboratory, he has been free of any respiratory difficulty.

COMMENT

The pathologic physiology of this condition would seem to be based on the rupture of pulmonary alveoli as a consequence of increased intrapleural and intra-alveolar pressure occasioned by the marked difficulty in expiration, typical of bronchospasm. The rupture of an emphysematous bleb or of a cavity apparently permits air to extend through the interstitial tissue of the lung into the loose cellular tissue of the mediastinum and from there to the subcutaneous tissue of the neck and face and over the entire body. The courses that air may take in the production of mediastinal and subcutaneous emphysema have been especially well studied experimentally by Ballon and Francis.[23] They have pointed out some of the consequences of increased mediastinal pressure, particularly the hyperventilation or hypoventilation of the lungs—stagnation of blood in the pulmonary bed, edema of the lungs and development of fluid in the pericardial cavity. In this particular case, hypoventilation could well explain some of the respiratory difficulty; none of the other complications were observed. My normal results with venous pressures are consistent with the results of other investigators in this respect. The significance of the area of consolidation in the left lower lobe seems difficult to evaluate. Interstitial emphysema following influenzal bronchopneumonia has been noted by Kountz and Alexander,[24] Kelman [25] and Harris,[9] among others. Its occurrence has been attributed to toxic action of the infecting agent on the lung parenchyma, on the respiratory center producing dyspnea, cyanosis and resultant emphysema [25] and to ulceration of the bronchial mucous membrane.[9] In the present case it would seem that the acute asthma was the primary factor in the development of the clinical picture with the pulmonary consolidation a secondary complication.

SUMMARY

1. Subcutaneous emphysema is a rare complication of bronchial asthma.

2. The emphysema in this case was probably due to the rupture of emphysematous blebs into the inferior mediastinum.

3. Symptomatic treatment and the usual measures employed in acute bronchial asthma are generally successful.

950 East Fifty-Ninth Street.

23. Ballon, H. C., and Francis, B. F.: S. Consequences of Variations in Mediastinal Pressure: Mediastinal and Subcutaneous Emphysema, Arch. Surg. **19**: 1627-1659 (Dec. [pt. 2]) 1929.

24. Kountz, W. B., and Alexander, H. L.: Medicine **13**: 251-316 (Sept.) 1934.

25. Kelman, Sarah R.: Experimental Emphysema, Arch. Int. Med. **24**: 332 (Sept.) 1919.

From the Fertility Clinic, Free Hospital for Women.
Read before the New York Academy of Medicine, May 26, 1936.

BIOPSY STUDIES OF HUMAN ENDOMETRIUM

CRITERIA OF DATING AND INFORMATION ABOUT AMENORRHEA, MENORRHAGIA AND TIME OF OVULATION

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AND
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Interest in the factors of female fertility has led us to a study of the endometrium, for among the cyclic changes in this tissue is written the story of the patient's menstruation, and from this we have traditionally sought insight into her ovarian behavior. Long before modern endocrinology a close association was recognized between uterine flow and fertility. Of late we have enjoyed the demonstration of causal relationship between the hormones of the follicles and of the corpus luteum on the one hand and of changes in the endometrium on the other. Work done in both the clinic and the laboratory shows that estrogen is the specific hormone of the growing and ripe follicle and that it causes proliferation of the endometrium. This is a true growth of the mucosa evidenced by many mitoses in the glandular epithelium, an increase in the number and complexity of the glands and an increase in the thickness of the whole tissue. It is learned too that the corpus luteum, which normally forms in the follicle only after its rupture and ovulation, secretes among other hormones the same estrogen and its own hormone, progestin, which causes specific changes in the proliferated and sensitized endometrium. The latter changes, which are attributed to progestin and are called secretory or functional, consist of certain cytologic variations in the glands and stroma of the uterine lining.

If one accepts the causal specificity of these mutations among the cells of the endometrium, that proliferation or growth of the glandular epithelium is the specific effect of estrogen, which comes in appreciable amounts only from the functioning follicle, one can reason backward and conclude that if the endometrium has these characteristics there is in one ovary at least one functioning follicle. And if one accepts the demonstration that progestin, which comes only from the corpus luteum, is the specific and only cause of secretory or functional changes in the glandular epithelium, one may likewise conclude that if the endometrium is found in such a secretory state there is at least some functioning corpus luteum in at least one ovary.

As, for a working basis, we have accepted these two causal specificities, that of estrogen on proliferation and of progestin on secretion, we have attempted to ascertain the condition in the ovaries by study of the endometrium.

For such a study we have used biopsies of the endometrium obtained by the small suction curet. To use this instrument profitably and to interpret the curettings correctly require recognition of the fact that all parts of the uterine lining and all levels of the endometrium do not partake synchonously or in the same degree in the proliferative and secretory activity mentioned. We believe that it is in only the mucosa from high on the anterior or posterior wall of the fundus that the cytologic changes specified occur with consistent accuracy and progression. Furthermore, even in specimens from these portions of the uterus, correct interpretation can be made only from the most superficial layer of the endometrium. Diagnosis is complicated even more by the fact that the endometrium, especially in hyperplastic conditions and in the late secretory phase, is not a flat smooth tissue but lies in irregular ripples over the subjacent myometrium. The day by day changes in the epithelium of the mounds and the valleys are not always of exactly the same degree. Fortunately one can ascertain by the arrangement and number of

Fig. 1.—Hypoplasia of endometrium. Biopsy obtains long ribbons of superficial epithelium and little if any stroma. Few, if any, tiny glands. All the sections presented are reduced from photomicrographs with a magnification of 100 diameters.

glands at the various stages of growth, by the quality of the stroma, and by the presence or absence of the superficial covering epithelium whether one has obtained tissue from the desirable loci or not.

Because even from these most favorable places the picture varies slightly, we believe that the punch biopsy is less serviceable than the suction curet, which obtains at least three times as much tissue. The larger surgical curet is also less useful even apart from its size, which requires dilation of the internal os. It traumatizes the tissue much more than does the smaller suction instrument. As the localization of the specimen and the finer dating of secretory specimens depend on the amount of edema and of internuclear cytoplasm in the stroma, and on the arteriolar proliferation and the condition of the

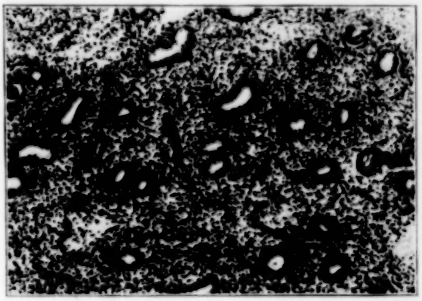

Fig. 2.—Early proliferation. Simple, small glands with low columnar epithelium and absent or beginning pseudostratification. Many mitoses. Fairly dense stroma. Small stroma nuclei with little if any cytoplasm.

perivascular stroma cells, the blood that the gross curet sets free in the tissue frequently constitutes a blinding hemorrhage. The smaller instrument can be used week after week to follow the development of the endometrium, for the damage it does to the tissue is slight and quickly repaired. Furthermore, it obtains only the useful superficial portion of the endometrium and not the deeper layers, in which the specific cyclic changes are not so regular or extensive. Such biopsy is a short office procedure rarely requiring anesthesia, and then not more than 3 cc. of 10 per cent solution of the sodium salt of n-methyl-cyclo-hexenmethyl barbituric acid, given intravenously. This renders the patient unconscious for the requisite two minutes. Complete recovery, sufficient to permit leaving the office, seldom requires more than ten minutes.

To characterize deviation from normal menstruation, we have used the following terms: normal menstruation to mean uterine bleeding in cycles not shorter than twenty-four days nor longer than thirty-one days, lasting at least two days and at most seven days and requiring at least two napkins for at least two days; oligomenorrhea or "few catamenia" to mean cycles habitually longer than thirty-two days and not usually longer than three months; polymenorrhea or "many catamenia" to mean cycles habitually shorter than twenty-four days; hypomenorrhea or "diminished flow" to mean bleeding requiring less than two napkins for less than two days; hypermenorrhea or "increased flow" to mean bleeding requiring more than six napkins for more than five days; amenorrhea, to mean absence of uterine bleeding for periods not less than three months; metrorrhagia, to mean bleeding quite irregular in interval, duration and amount, and aperiodomenorrhea or "irregular catamenia" to mean bleeding in cycles sometimes shorter than twenty-four days and sometimes longer than thirty-two days, a combination of oligomenorrhea and polymenorrhea.

Of the 900 biopsies from which this study was made, only 457 biopsies from 329 patients are here discussed.

Several hundred other biopsies from these and other patients are not included because the ancillary data were insufficient; because the biopsy had been preceded by organotherapy, which may have changed the natural endocrine balance; because they were uninstructive repetitions of previous observations, as in repeated specimens from an unchanging amenorrheic endometrium, and in about fifteen cases because the specimen was inadequate for satisfactory examination. The tissue drawn into the curet was washed out and hardened in solution of formaldehyde, then cut in celloidin to a thickness of 14 microns and stained with hematoxylin and eosin. Specimens are diagnosed arbitrarily on the basis of a twenty-seven day cycle with ovulation on the fourteenth day, corpus luteum effect on the fifteenth day and menstruation on the twenty-eighth day. We have worked out our own criteria for diagnosis of the specimens, with some assistance from the previous work of Schroeder [1] in Germany. We have derived valuable assistance also from studies made here by Bartelmez [2] and by O'Leary.[3] We do not claim exact accuracy. We believe, however, that it is possible to detect even a slight progestin influence and that it is justifiable, when this is found, to assume ovulation as having occurred. Furthermore, we believe it possible to read in the endometrium the duration of progestin effect and thus ascertain the age of the corpus luteum, and possibly the normality of balance between progestin and estrogen in the blood. To determine, in the presence of imbalance, just which factor is deficient may be possible when more is learned of just which cytologic effects during the functional phase of endometrial activity are attributable to each hormone. Some are known already, as I hope to show; many must still be hidden from us.

Fig. 3.—Late proliferation. Simple, moderately dilated glands with columnar epithelium and pseudostratification and occasional mitotic figures. Stroma cells low in cytoplasm. Extravasation of erythrocytes, possibly traumatic.

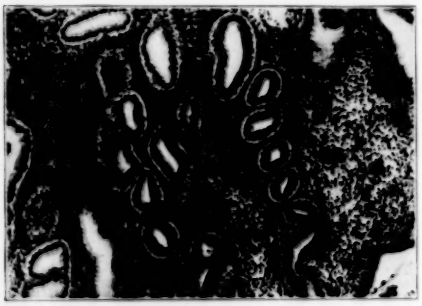

Fig. 4.—Seventeen day endometrium. Further rippling and dilatation of glands. Stroma still generally dense. Stroma nuclei almost nude. Marked change in epithelium of glands. In the glandular epithelium there is a central migration of the nuclei, leaving a well marked lucid zone behind.

The characteristic endometrium of the established menopause and of most long-standing cases of amenorrhea, with its thin, superficial epithelium, its thin stroma and paucity of relatively small and simple glands yields to the curet only the topmost epithelial layer and stroma with a depth of only a few cells (fig. 1). In the last three years we have come to know that from this hypoplastic endometrium alone does the curet fail to obtain more stroma and glands and so confidently diagnose hypoplasia when only such a tiny specimen is obtained. From this we deduce a failure of follicle formation and of estrogen production. Estrogen effect is readily seen in the larger specimens, which include stroma and glands. After the third day of menstruation the epithelium of the glands, which was cuboidal, quickly becomes columnar with pseudostratification of the nuclei and frequent mitoses. The glands at first are uniformly small and simple. While they remain thus we call the endometrium early proliferative (fig. 2). Later when the stroma nuclei increase a little in size, the glands become larger and wavy and the epithelium becomes high columnar with marked pseudostratification and frequent mitoses, we diagnose late proliferation (fig. 3). When we find such glandular epithelium lacking in mitoses or containing only an occasional mitotic figure in a rare gland, we arbitrarily classify it as a fourteen day specimen. If signs of continued growth, as evidenced by many mitoses in pseudostratified columnar epithelium, occur in plentiful dilated distorted glands placed in relatively thick stroma, the diagnosis of fourteen day hyperplasia is made. If such glands vary widely in size, especially if some are

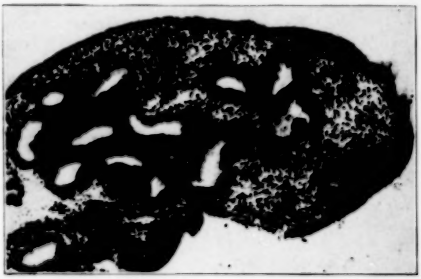

Fig. 5.—Nineteen day endometrium. Slightly more generalized edema of stroma. Nuclei still with little cytoplasm. Glands practically as before except for epithelium.

1. Schroeder, Robert: Weibliche Genitalorgane; in Möllendorff, Wilhelm, and Schroeder, Robert: Harn- und Geschlechtsapparat: Part I, Berlin, Julius Springer, 1930.

2. Bartelmez, G. W.: Histological Studies of Menstruating Mucous Membrane of Human Uterus, Contributions to Embryology **24**: 143-186, 1933.

3. O'Leary, J. L.: A Quantitative Study of the Relation of Nucleus to Cytoplasm in Human Endometrium During the Menstrual Cycle, Anat. Rec. **50**: 33 (July) 1931, Form Changes in the Human Uterine Gland During the Menstrual Cycle and in Early Pregnancy, Am. J. Anat. **43**: 289 (March) 1929.

cystic—that is, are large, round and with flattened epithelium—we call it fourteen day dysplasia, of which Novak's "swiss cheese" endometrium is an example.

We have not been able to make day by day classification of proliferating endometrium, that of the estrogen phase of the ovarian cycle. We see an appreciable difference by the concentration and size of glands and by the gland epithelium between the six day endometrium and that of the twelfth day, but among the first eight days and among the last six we cannot define exact criteria. We therefore limit our classification of normal proliferating endometrium to the types mentioned: "early proliferating," when they resemble a six day type; "late proliferating" when they more closely resemble a twelve day type, and "fourteen day" when proliferation has been accomplished and mitotic figures are scarce.

From the fourteenth day on to the twenty-seventh and menstruation, classification is much simpler, although we make no claim to exact accuracy. The first sign of progestin effect, which we arbitrarily place on the fifteenth day, is seen in vacuolization of the cytoplasm and beginning migration of the nuclei toward the surface of the cells, leaving a lucid zone underlying the nuclei. Two days later (fig. 4) this zone is well marked and the nuclei above it are lining up to lie later each beside the other near the middle of the cell. Two days later, on the nineteenth day (fig. 5), this has been accomplished and the row of nuclei has sunk distally near to the base of all the cells. Until after the next day an occasional group of nuclei will still be seen proximal to a small "zona pellucida."

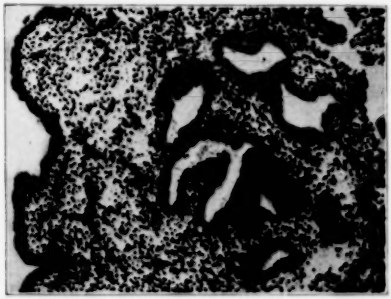

Fig. 6.—Twenty-one day endometrium. Generalized marked edema of stroma. Scant cytoplasm. Arterioles becoming prominent. In the glands the nuclei are uniformly basal and the lucid zone has disappeared. The cytoplasm is vacuolated and begins to disgorge into the lumen.

Noticeable about the eighteenth day is a beginning edema of the stroma, first in patches a slight distance below the superficial epithelium. This spreads until it is generalized by the twenty-first day (fig. 6), the day on which the last vestige of the "zona pellucida" has disappeared. On the twenty-first day also the process of "secretion," which began about the seventeenth day, is well advanced. This is seen as a swelling of the epithelial cells, including the nucleus, and at first a progressive vacuolization of the cytoplasm overlying the nuclei and then a fraying of the cell margins as of breaking of the vacuoles into the lumens of the glands. These dilate and their epithelial borders become serrated, as if from crowding of the enlarged epithelial cells.

From the twenty-first day onward the telltale signs are seen not primarily in the glands but in the stroma and vascular system. The first change was edema, which has become generalized by the twenty-first day, each stroma nucleus being separated from its fellow and bare of all but a slight trace of cytoplasm, which streaks outward in irregular internuclear fibrils. The cross section of groups of small arterioles is seen lying among the glands. Two days later, on the twenty-third day (fig. 7), a marked change has begun in the stroma cells and in the walls of the arterioles. The latter are larger and the walls thicker. They are more numerous, and single vessels are seen coursing upward and tangential to the superficial epithelium. Most interesting is the increase in the cytoplasm of the stroma cells. This begins in those near the arterioles and on the twenty-third day is well marked. By the twenty-fifth day (fig. 8) this process has increased in amount and extent until much of the stroma is affected. The edema is replaced by masses of contiguous large cells with large pale nuclei and much cytoplasm. The next day, the twenty-sixth (fig. 9), the increase in the size of stroma cells has extended so that almost all the interglandular cells are contiguous.

Fig. 7.—Twenty-three day endometrium. The stroma cells near the thick walled arterioles, especially, and in dispersed units acquire more cytoplasm.

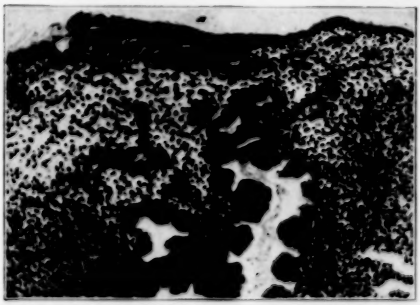

Fig. 8.—Twenty-five day endometrium. Large groups of stroma cells acquire more cytoplasm, especially near the arterioles. Those in the edematous areas are also larger. The arterioles are very prominent.

On the twenty-seventh day (fig. 10) this solidification of the most superficial stroma becomes complete. Many

cells are indistinguishable from young decidual cells. Indeed, they are such. The glands are widely dilated and the epithelium, rid of most of its cytoplasm, approaches the cuboidal. The vascular system is highly developed and the arterioles and venules are engorged with blood. This is the predeciduum, and catamenia is at hand.

The first sign of this event, which again arbitrarily we place on the twenty-eighth day, is an influx of

Fig. 9.—Twenty-six day endometrium. Cytoplasm of stroma cells increases so that cells become contiguous in ever-widening areas. Nuclei are larger and stain less deeply.

lymphocytes and polymorphonuclear leukocytes. These are present in the endometrium always, but normally in small numbers. They are not significant for diagnosis until about the twenty-fifth day, when they become more numerous. Late on the twenty-seventh day, just before menstruation, they appear in great numbers, being plentiful at first just beneath the superficial epithelium. Erythrocytes too are present at all stages, some because of trauma but some, we believe, normally. Rather abruptly just before menstruation, or as we would say late on the twenty-seventh day, these increase in number. They appear in clumps and, here and there below the superficial epithelium, in rows as well as clumps. This extravasation of red blood and mobilization of lymphocytes extends until the whole predeciduum is infiltrated, the stroma nuclei become pale, neutrophils appear in large numbers, the tissue is disintegrated and menstruation occurs. Such is the picture on our twenty-eighth day, which we also call first day and catamenia.

There is much practical value in this method of studying the endometrium. We have dwelt on the simplicity of obtaining the tissue. The differential diagnosis between proliferating and secreting endometrium—the former showing only estrogen influence and the latter both estrogen and progestin effect—is also quite simple. We still find diagnosis of proliferating endometrium by days impossible, although, as has been said, there is an easily detectable difference between early proliferation and late proliferation. The day by day diagnosis of functional endometrium on an arbitrary scale, as for a twenty-seven day cycle, with ovulation on the fourteenth day, is not impossible. We believe with improvement of technic and criteria that it can be done, and with an accuracy of within one day.

For the rational clinical use of even the few potent preparations of gonadotropic substances, estrogens and progestin already available, this method of diagnosis is of great value. It will help too in the formation and the testing of theories. By it one can determine whether and when a patient ovulates, and, if she is anovulatory, whether any of the gonadotropic substances either from the pituitary gland or from pregnancy urine is effective. Hypoplasia may be accurately diagnosed and treatment objectively evaluated. One may perhaps determine also the integrity of the corpus luteum; i. e., whether it secretes progestin in an amount normal in itself or in normal relation to the amount of estrogen present and for a normal length of time.

Biopsies studied in various specific conditions of abnormal menstrual behavior have furnished some interesting data; for example, in amenorrhea. Forty-eight biopsies were made on thirty-six patients with amenorrhea; i. e., patients who habitually passed at least three months without flow. Half of these showed hypoplasia, one third showed a proliferating endometrium and one sixth showed signs of having ovulated. All the latter had flowed within six months prior to the biopsy; their amenorrhea had not been of long standing. There were only five such biopsies showing secretion, from five different patients. The subsequent history of two of these we do not know. Three of them flowed soon after biopsy. We believe that the others did also, because of over 300 biopsies which showed secretory endometrium and of which we have subsequent information, only two were not followed within sixteen days by flow, and one of these two flowed on the twentieth day. We can find no evidence, in biopsy studies, of the existence of a persistently functioning corpus luteum in human beings. Even the one patient just mentioned, who did not flow after a secretory endometrium was found, subsequently showed a proliferating endometrium without evidence of function, although no gross flow intervened. As in all mammals below the primates, her endometrium regressed without flow. We believe that in the absence of pregnancy persistent corpus luteum is never an explanation of amenorrhea.

The estrogenic phase of endometrial development on the other hand may persist almost indefinitely without

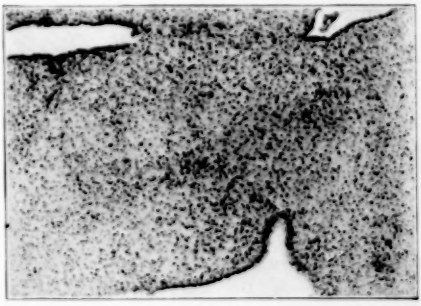

Fig. 10.—Twenty-seven day endometrium. The predeciduum. The interglandular stroma is solid in large areas. The cells are indistinguishable from young decidual cells. There is beginning infiltration of lymphocytes. The glands have cuboidal epithelium.

menstruation, five of our sixteen biopsies that showed proliferation having been taken over a year after the last flowing; five other patients did not flow following the biopsy. Many patients with long standing amenorrhea, then, have a high degree of follicular activity and offer good prospects for clinical relief.

A failure or an extremely slight degree of follicle formation is found to be the cause of most long stand-

ing cases of amenorrhea and may easily occur in patients who flow infrequently during any year.

We have fifty-four biopsies from forty-five patients in whom flowing was increased and so irregular in volume and incidence as to warrant a diagnosis of metrorrhagia. Only three of these showed deficient follicle formation. One half showed evidence of good follicular activity and slightly less than one half showed signs of ovulation almost irrespective of the time

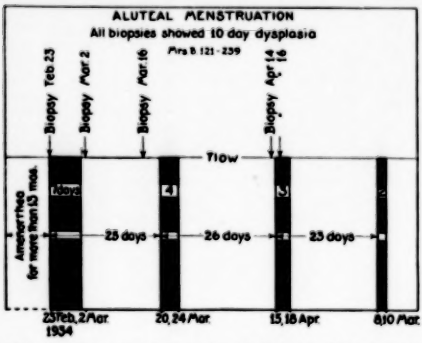

Fig. 11.—Biopsy may have precipitated flowing in this patient, who had been amenorrheic for more than one year. She flowed four times with fair regularity, the last time, however, without preceding biopsy. Examination showed that at least the first three periods were anovulatory, as, in spite of flowing, the endometrium remained stationary in a late proliferative phase.

elapsing between the last flow and the biopsy. Thus we learn that patients may flow excessively and irregularly with any degree of endometrial development. The mere presence of a functioning corpus luteum will not prevent metrorrhagia, nor will hypoplasia of the endometrium. By this method of study it is possible to distinguish between the patient with irregular catamenia and hypermenorrhea and the patient with dysfunctional uterine hemorrhage who does not ovulate —an important distinction to make if there is complaint of sterility.

An engrossing aspect of these studies is the light they throw on the question of the ovulation time in women.

We have *222* biopsies of postovulatory endometrium for which we know the date of the preceding menstruation. We are unable to correlate the dating on our arbitrary plan (that is, for a twenty-seven day cycle with ovulation on the fourteenth day) with the date of the preceding menstruation except in moderate degree for those largely selected cases in which we expected conformation and in which biopsies which were dated older than the twenty-fourth day were obtained. This lack of correlation is not surprising, since we have found what many others have shown that full proliferation may persist in the endometrium almost indefinitely and regardless of flow, suggesting the indefinite persistence in the ovary of ripe follicles capable of ovulating any time, even during an anovulatory catamenia. (Such may offer the explanation of those rare cases of fertilization occurring just before, during or after what seemed like normal menstruation.)

We have 200 biopsies of postovulatory endometrium for which we know the dates of the succeeding menstruation. This is shown in the accompanying table.

Among these biopsies we find an impressive agreement with the theory attributed to Ogino and Knaus. If we insist that ovulation takes place on the fourteenth day before menstruation, only 15.5 per cent of our biopsies are correctly dated. This is not as inaccurate as it seems, for the chance of menstruation occurring on any single subsequent date is immeasurably less than 15.5 per cent. If we accept the proposition that ovulation occurs from the twelfth to the sixteenth day before menstruation, our dating is found correct in 70 per cent of the biopsies, when the chance for error was almost infinity. If we are allowed an inaccuracy of one day in the dating, we conform to the theory in 87.5 per cent with the same chance factor of almost infinity. Correction of these figures by omission of cases in which the flow occurred on the day of the biopsy and was possibly precipitated by it, or of those largely selected cases in which the specimens were dated over the twenty-fourth day, or omission of both such groups, does not materially change the percentage of correct dating. Conversely, if one can accept the accuracy of our dating, the Ogino-Knaus theory applied to about 75 per cent of our patients.

For consideration of the latter point, it should be remembered that almost 81 per cent of the patients recorded are between 25 and 40 years of age and 63 per cent are between 25 and 35; furthermore, that they all menstruate with moderate regularity. From our biopsy data, then, the most we may at present say is that regularly menstruating women between the ages of 25 and 40 have a 75 per cent chance of ovulating between the twelfth and sixteenth days inclusive before the succeeding menstruation.

Any method of transcervical approach to the endometrium seems to have one potential quality that is good or bad according to the purpose of the instrumen-

*Ogino-Knaus Theory: Corpus Luteum Functions for Twelve to Sixteen Days Before Catamenia**

		14 Days	12-16 Days	11-17 Days
All cases	Correct	31 (15.5%)	140 (70%)	167 (83.5%)
	Incorrect	169 (84.5%)	60 (30%)	33 (16.5%)
Omitting all cases dated over 24th day	Correct	55 (4.7%)	54 (18.8%)	78 (73.6%)
	Incorrect	101 (95.3%)	53 (51.2%)	28 (26.4%)
Omitting cases in which flow occurred on day of biopsy	Correct	31 (18.7%)	118 (71.5%)	141 (85.4%)
	Incorrect	134 (81.3%)	47 (28.5%)	24 (14.6%)
Omitting both the above groups	Correct	5 (5.1%)	51 (52.5%)	78 (70.1%)
	Incorrect	92 (94.9%)	46 (47.5%)	10 (29.9%)

* The figures show relative accuracy of theory and dating. If the Ogino-Knaus theory is correct then the dating of biopsies is correct in percentages given; if the dating is correct then the theory applies in percentages given. The eleven to seventeen day group allows for a mistake of one day in the dating.

tation. In some mysterious and unpredictable way it sometimes, not always, changes the existing hormone setup. A patient with amenorrhea of persisting abnormal proliferation may flow not immediately or only once but sometimes in apparent cycles and without ovulation (fig. 11); or a patient with a similar failure of ovulation with or without flow may suddenly ovulate, as if from the effect of the biopsy.

These phenomena raise many questions that tempt digression. Is there in the cervix a nodal point of the autonomic nervous system whereby the anterior pituitary dynamo may be effected? Labor, which may or may not require the anterior pituitary, is often induced by cervical stimulation. What is the relationship between these phenomena and that of ovulation induced in the isolated mature doe by cervical stimulation? Similarly, is the slight traumatization of the endometrium in some of these patients conducive to an unusually extensive decidual response, as is seen in the pseudo-pregnancies, induced in like manner in some laboratory animals, and does this augmented reaction offer to some sterile patients a more serviceable placental site?

Whatever may be the method or explanation of these apparent consequences of endometrial biopsy, one must keep in mind the possibility of such an influence when interpreting the menstrual behavior following its use. The incidence is not constant or, we believe, so common as to destroy the utility of this method of study if applied to a very large number of cases.

Many other interesting observations have been made in these studies. Eight cases of tuberculous endometritis in sterility patients, seven of these quite unsuspected, were found. Two biopsies showed cancer of the endometrium, one of these in a patient only 35 years of age and quite unsuspected. Mallory Sr. confirmed this diagnosis. In three biopsies evidence of early pregnancy was found. One biopsy was due to a mistake in selection of patients by mixing of records in the clinic. No great harm was done. One patient gave a history which warranted clinically a diagnosis of metrorrhagia. She was, conceivably—shall we say—malingering. Another was a widow whose wishful thinking misled us. Her pregnancy was not interrupted by the biopsy.

SUMMARY AND CONCLUSIONS

The suction biopsy is a very useful method of endometrial diagnosis, better, we believe, than the punch biopsy or curettage. The specimen should be taken from high on the anterior or posterior wall of the corpus, for only here are cytologic changes complete and progressive.

Two phases of endometrial development during the menstrual cycle are cytologically distinguishable: the proliferative, attributable to estrogen, which shows well marked differences between its earlier stage and its subsequent development; the second, the secretory phase, attributable to both estrogen and progestin. During this phase, mutations in the glands and their epithelium in the stroma and its cells are characteristic of successive days and make possible a day by day appraisal of corpus luteum activity.

Such dating of the endometrium on an arbitrary scale as for a twenty-seven day cycle with ovulation on the fourteenth day is useful for determination of ovulation, for diagnosis in menstrual disturbances and for evaluation of endocrine therapeusis.

Amenorrhea is usually due to deficient follicular development but may be present even though a proliferative endometrium shows a high degree of follicle activity and rarely in the presence of cyclic ovulation, as in subprimate mammals. We believe that in the absence of pregnancy there is never a persistent corpus luteum.

Metrorrhagia, too, may occur with any degree of endometrial development and therefore in spite of ovulation and corpus luteum formation.

Biopsy studies show that in human beings the follicle phase is variable within extremely wide limits but that at least 75 per cent of women between the ages of 25 and 40 have a corpus luteum phase of from twelve to sixteen days.

8 Cumberland Avenue.

COMPARISON OF METHODS OF ROENTGEN EXAMINATION OF THE COLON

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Twenty-nine years ago I gave my first opaque enema under fluoroscopic screen control. The publications of Pfahler and a few references from foreign literature constituted the stimulus for the undertaking. Bismuth subnitrate was the opaque salt, suspended in buttermilk. The chief aim of the study was to determine the position of the transverse colon and of the right and left colic flexures. To emphasize the contrast presented by the elaborate roentgen study of the colon as practiced now, with indications for its use covering a very wide range of pathologic possibilities, I was asked to offer a review of the evolution of the technic of x-ray examination of the colon, followed by an evaluation of the different methods.

Routine practice in intestinal x-ray examinations includes the opaque meal, with appropriate screen or film observations of the opaque residues as they move along the large bowel (fig. 1), followed by the contrast enema (fig. 2) administered under screen control by the physician-radiologist himself, with appropriate film records during the course of the fluoroscopy, and subsequent observations after the patient has attempted to expel the contrast fluid. The combination of these two

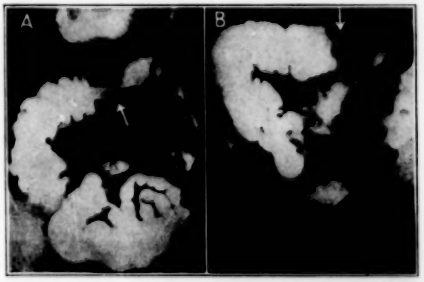

Fig. 1.—Carcinoma of transverse colon easily recognized on the films following an ordinary barium sulfate meal. Easily seen on the fluoroscopic screen.

series of observations constitutes what we are pleased to call a complete gastro-intestinal roentgenologic study. Much of its value lies in the fact that it is done as a routine, and this routine is justified by the frequency with which colonic lesions are encountered when only pathologic conditions of the upper part of the abdomen are suspected and vice versa. The same justification exists for a routine complete gastro-intestinal x-ray study in every case of suspected lesion anywhere in the

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digestive tube as there is for the complete clinical work up considered good and accepted procedure in the general examination of any patient. There is the difficulty of financial objections in many cases, but radiologists have made a sincere effort to cooperate with the other clinicians in keeping their services within reach of the needy.

On the whole, it may be said that the colonic study with the opaque meal gives information more especially regarding function, whereas the contrast enema affords data relating to organic lesions, the two methods overlapping somewhat in their usefulness and yet often supplementing each other in a very precise manner. The opaque meal study is time consuming, sometimes extending into three days, whereas the contrast enema or some elaboration of it can be accomplished within a short time in one day. The presence of such a condition as anal insufficiency may necessitate the use of the barium meal study even though the contrast clysma would be the method of preference. There is also a use for the oral contrast method, preferably by the employment of umbrathor, in cases in which the contrast enema has revealed a serious obstruction and the radiologist does not wish to force passage of the stricture and yet wishes to obtain information regarding the digestive tube proximal to the stricture. Haenisch of Hamburg, a pioneer in this work, in 1911 called attention to the fact that in many cases of colonic obstruction the stricture offered little hindrance to the passage of relatively dense bowel residues coming from above while resisting the passage of the fluid contrast enema (fig. 2); he thought that the long continued effort of the colon to force fecal residues caudad through the narrowed lumen resulted in the development of a funnel effect, which operated to offer a valvelike opposition to the ascent of the fluid enema. Umbrathor, being an aqueous solution of thorium dioxide, remains fluid and presents no possibility of impaction above a stricture, an accident needlessly feared if one takes the precaution to follow up the examination with subsequent observations to note possible impaction. Finsterer saw no objection to barium sulfate for this study, for, if impacted, it could be removed by the operation that was indicated in any event. However, the use of the aqueous solution instead of the opaque salt suspension removes this objection entirely.

Fig. 2.—A case of multiple diverticula of the colon with obstructing peridiverticulitis, illustrating the difficulty in passing the opaque clysma higher than the obstruction, although with a previous barium sulfate meal, residues of which are seen in the diverticula, no obstruction was noted. It is not wise to persist in the attempt to fill the colon by enema.

The contrast meal had its inception early in the history of roentgenology through the work of Cannon and Williams, Hemmeter, Rieder, Pfahler and a host of others. Air injections into the colon were practiced as early as 1907 (Pfahler, Cole and others) principally for the purpose of studying the relationship of intra-abdominal tumors lying outside the digestive tube and to afford greater visibility of the liver, spleen, gallbladder and kidneys, the increased translucency of the air-distended bowel offering a marked contrast to the denser shadows of the organs or tumors in question.

The efforts of Pfahler and of Cole, and especially the work of Haenisch published in 1910 and 1911, definitely established the contrast enema as a dependable method of colonic diagnosis, especially in relation to gross pathologic alterations. Various improvisations of apparatus were utilized for the screen study of the contrast enema, the final and best known one being the "trochoscope" of Haenisch, the forerunner of the present day horizontal fluoroscope, widely adopted, and copied and improved. Roentgenoscopy was also greatly facilitated by the introduction of the author's foot switch, automatically cutting off the room illumination whenever the x-ray current was turned on.[1] With the fluororadiographic switch it became easy to turn the patient or tilt the table to any desired degree during the course of the screen study and to make appropriate film records without loss of time. As early as 1909 this technical procedure became a part of our routine practice. The single contrast enema, thus employed under roentgenoscopic control, is the most expeditious, simple, convenient and generally useful method of study of colonic morphology. It should be administered by the roentgenologist himself at a rate sufficiently slow to allow adequate screen study and such fluororadiographic film records as seem required. One hears of instances

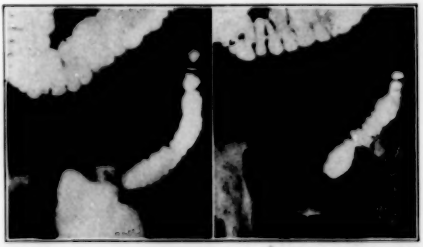

Fig. 3.—Simple opaque enema, followed by expulsion of as much as may be possible, often reveals the site of obstruction and its nature without resort to more complicated diagnostic x-ray studies. In this case there is a carcinoma of the lower sigmoid, not as yet offering any serious obstruction.

1. The author believes that in 1909 he was a pioneer in the use of such a foot switch. He later described to the engineers of a well known concern manufacturing x-ray apparatus his desire for a double fluorographic foot switch, one pedal being for use in fluoroscopy at around 5 milliamperes of current, the other for radiographic work at 50 milliamperes or more, as required. The fluoroscopic pedal also extinguished the overhead room light whenever the screen was in use. The controls were arranged before beginning the screen study, so that at any moment during the course of the fluoroscopy it was easy to interpose a cassette and make an instantaneous film record (recently called "spot film") of any desired phase of screen observations without a moment's delay. From this request was evolved the present fluororadiographic switch, which adds so much to the comfort and facility of roentgenoscopy of the colon.

in which a nurse technician or other lay assistant administers the opaque enema as she would an ordinary cleansing enema, after which the patient is removed to the roentgenographic table for a film. But this is faulty practice; it is imperative that the eyes of the physician radiologist should follow every inch of the ascent of the opaque column, for his experience and medical train-

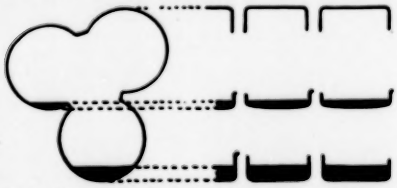

Fig. 4.—Illustration borrowed from Schinz showing diagrammatically the three rows of colonic haustra. It sometimes occurs that only two rows are visualized with opaque material, the other row being filled with stagnant nonopaque material or with gas. Under such circumstances it is possible to make an erroneous diagnosis of colon polyposis.

ing will enable him to recognize and record roentgenographically aberrations from the normal (fig. 10) which would not be otherwise discovered even on the final films. From my earliest roentgenoscopic studies on the colon it has been my practice, as a necessary part of the procedure, to turn the patient into the left oblique position (figs. 8, 11 and 12) and often also to the right, to observe the filling of the rectum and sigmoid and to make film records ("spot films") with the film cassettes placed in the most favorable position under screen guidance and exposed without interruption of

Fig. 5.—Roentgenogram made at once after evacuation of the ordinary opaque enema. A record of this kind, when the enema has been successfully expelled, demonstrates the elasticity of every inch of the colonic wall and the fact that the lumen is clear of tumors. (Contrast this film with figure 6, which under similar circumstances shows a tumor in the right half of the transverse colon.)

the fluoroscopic examination. Straight lateral films of the rectosigmoid are sometimes helpful in recording for later study the appearance of the posterior wall of the rectum, which would otherwise be missed because of the impossibility of proper fluoroscopic vision through such dense parts.

Preparation of the colon by preliminary cleansing of fecal residues seems ideal. A day or two of liquid petrolatum by mouth or perhaps even an ounce (30 cc.) of castor oil, followed by enemas in the early morning the day of the examination, causes the least disturbance of colonic function. As a matter of practice the cleansing preparation is not usually requested, for recognition of the residual accumulations of intestinal content through the defects in an otherwise uniformly even density of the contrast shadow of the colon at once furnishes data concerning colonic stasis and gives some aid in determining the type of constipation.

A careful analysis of the problem postulated in each case will often lead to the opaque enema as the first x-ray procedure in the study of a suspected colonic lesion. This is true whenever the lesion is thought to be of an obstructive or potentially obstructive nature, when the retention of the accumulated opaque materials from the previously given opaque meal above the site of

Fig. 6.—After attempt at colonic evacuation after opaque clysma, it is easily recognized that the right half of the transverse colon is the seat of an irregular filling defect around which barium residues are noted. Serial films over this part of the colon, made during fluoroscopy, confirmed the diagnosis of carcinoma.

obstruction might prove embarrassing. For example, if carcinoma of the colon is suspected, one proceeds at once to the contrast enema, supplementing it later by air injection and stereoscopic films should the conditions seem to indicate.

It remained for Fischer in 1923 to popularize the idea of the double contrast method, combining the contrast enema with air insufflation of the colon. His technic required the introduction of the ordinary contrast enema of about 1 liter, administered under roentgenoscopic control and assisted by manipulation with the palpating hand or by turning the patient, after which a roentgenogram was made. He then proceeded to make an inflation of the colon without much regard for possible overdistention, although he did sometimes allow the patient partially or completely to evacuate before injecting the air. His patients were prepared by preliminary administration of a laxative sufficient to clear the colon of all foreign material, sometimes supplemented by cleansing enemas. Fischer introduced the enema by the gravity method and the air by an ordinary handblower. He thought a mixture of about four parts of air to one of opaque clysma desirable, and he placed the patient in whatever position was most suitable for

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193

demonstrating the segment of colon under study. He particularly favored the right and left lateral positions, with the rays directed horizontally, parallel with the floor, and the film held vertically, and he evolved an elaborate analysis of the various fluid levels and mural contours.

Fig. 7.—So-called spot film made with a fluororadiographic switch, under fluoroscopic control, without interruption of the fluoroscopic examination. Fine detail is recorded, as in this case of carcinoma of the descending colon.

The next stage of technical progress in colonic investigations with the roentgen rays was the development of methods for showing the internal mucosal relief of the digestive organs (figs. 5, 6, 8 and 13). Akerlund, Berg, Chaoul, Schwarz, Frik, Gilbert and many others might be mentioned, all of them basing their studies on the original work of Forssell. In this country Weber, Gershon-Cohen and others have led in reestablishing interest in air injections of the colon following the barium sulfate enema and have brought the "combined method" or "double contrast method" to a high state of refinement in technic and interpretation in the search for some means of making an earlier diagnosis of carcinoma of the colon, in differentiating various types of colitis and particularly for the discovery of small polypoid growths (fig. 13) and mucosal ulcerations.

Proper double contrast study for delineation of the mucosal pattern requires thorough preparatory cleansing of the colon to remove scybala, organic débris, mucus and the like. This is best accomplished by the administration for several days of liquid petrolatum, or by 25 or 30 Gm. of castor oil administered the night before, with ordinary cleansing enemas of tap water rendered slightly astringent with 1 per cent of tannic acid. These should be given warm, at low pressure, with the patient lying supine and with the enema tip inserted not more than an inch (2.5 cm.). The last cleansing enema should be terminated an hour or more, better three hours, before the attempt at x-ray study. The use of salines or other purgatives should be proscribed, for they provoke hyperemia and turgescence of the mucous membranes, as do also strong soap enemas, and lead to colonic spasticity and retention of the opaque enema, the expulsion of a goodly portion of which before the insufflation is so necessary to success. Such preparation is contraindicated in suspected acute inflammations, such as appendicitis, sigmoiditis or diverticulitis, in suspected acute obstruction and in advanced cachexia or impending syncope. The insufflation becomes an unsatisfactory method when the patient cannot expel the opaque enema. In marked atonicity of the colon, the use of a cold contrast enema enables the patient to make a better expulsion of opaque material preparatory to the insufflation.

I was called in consultation in two cases of colonic diverticula in which rupture of a diverticulum occurred during rectosigmoidoscopic manipulations, one of them an examination and one a treatment. In both cases an emergency operation was demanded as a life-saving measure. But in addition to gross rupture necessitating immediate laparotomy there is the somewhat greater likelihood of the passage of air through small openings in diverticula with subsequent infection of the peritoneum. Overdistention with the opaque enema may also be somewhat hazardous for the same reason.

There are also the cases in which insufficiency of the anal sphincter inhibits the use of either the barium sulfate enema or the insufflation of air. In such, the oral use of umbrathor or of some similar preparation is likely to give some help. Schwarz has described a method of introducing the contrast enema through a

Fig. 8.—Case illustrating the value of patience and deliberation in x-ray study of the colon. The patient presented an obstinate constipation with marked left-sided tenderness coinciding with a resistant area. At *A* one sees a filling defect in the sigmoid visualized with the ordinary opaque clysma. At *B* this stricture in the sigmoid is further shown by injection of air following partial evacuation of the opaque clysma. The diagnosis as to whether the stricture is malignant or benign is still in doubt. By reinjecting some opaque material and waiting five or six hours (*C*) the presence of multiple diverticula is recognized, and the diagnosis of diverticular tumor is clear.

rectal tube surrounded by a cotton pack and held in place by adhesive plaster.

In daily practice it transpires that the examination of the colon usually begins with the contrast enema. The patient is in the supine position, with the tip inserted only an inch or so within the sphincters. The examiner's eyes are duly prepared for roentgenoscopy. Casettes are ready at hand and the controls are so

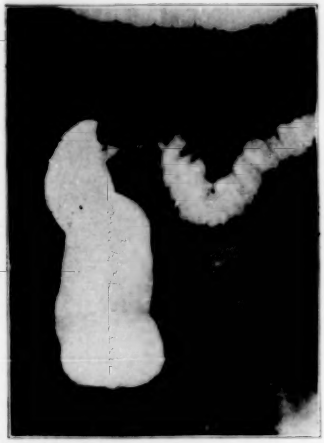

Fig. 9.—Annular carcinoma of rectosigmoid associated with diverticula of the sigmoid. Resection of the tumor required removal of a portion of the fundus of the bladder and the sigmoid to a point above the obstruction, with end-to-end anastomosis.

arranged that immediate x-ray films may be made without loss of time or interruption of the screen study should something be noted worthy of record. The flow is started and careful scrutiny of the lower part of the rectum and anal region is begun the moment it commences to visualize. Occasionally at the moment of

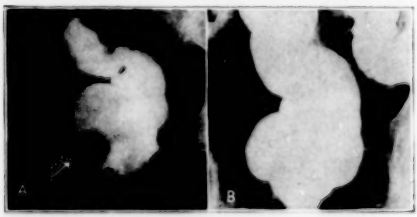

Fig. 10.—This case illustrates the necessity of having a physician-radiologist conduct the entire examination of the colon by enema under fluoroscopic control. In this case a definite filling defect is seen in the rectum before it becomes completely filled with the opaque enema; for with complete distention with the opaque enema the defect due to the carcinoma is entirely hidden by overlying shadows.

beginning the opaque injection a small anal lesion (fig. 10) can be detected which is soon overshadowed by the rectal mass.

As the opaque column begins to ascend the sigmoid, the patient is partially turned on one side, usually the left, so that every inch of the advancing colonic shadow may be studied. Palpation is employed as needed. Care is taken to avoid confusion of small gas or air pockets in one of the colonic haustra (fig. 4) with a polypoid growth. In spite of all precautions, small rounded fecal residues may lead to similar confusion. Serious error may result from failure to recognize these possibilities. Straight lateral films with the patient turned completely on the left side sometimes bring out small defects in the rectal shadow from intrinsic disease or from extension of disease from the prostate, bladder or other genito-urinary organ.

These observations completed, the patient is turned once more on the back and the progress of the opaque enema further observed. Too much haste must be avoided. A relatively small amount of contrast material will suffice to visualize the entire colon without overdistending it if one is not too precipitate. Impatience and press of work are incompatible with successful fluororadiography of the colon, especially if one wishes to combine contrast methods. Overdistention must be avoided if it is desired that the patient shall be able to make a satisfactory expulsion of the contrast fluid preparatory to the possible use of insufflation.

Again the patient is turned as needed to bring into unobstructed screen vision the two legs of the splenic and hepatic flexures. Intestinal coils may be pushed aside by palpation through the abdominal wall with the protected hand or the nonopaque wooden palpator.

Finally attention is given to the cecum. If the colon is of the irritable spastic type, the head of the opaque

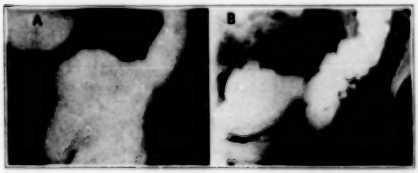

Fig. 11.—It is necessary as a routine practice to make an oblique film of the sigmoid in all colonic examinations (*B*) as well as a film in the usual (*A*) anteroposterior or postero-anterior projection. In this instance the diverticula would have escaped detection had not the oblique observation been employed.

column will have reached the cecum quickly, and in most cases several feet of ileum will fill. Marked insufficiency of the ileocolic valve is one of the roentgenologic characteristics of the irritable colon, as was shown by Guido Holzknecht and Singer in Vienna twenty-five years ago. In cases of suspected ileocecal tuberculosis this filling of the ileum is helpful, permitting scrutiny of the terminal coils of ileum for possible ulceration. It is also helpful in granulomatous ileitis. But when it is desired to make insufflation studies after expulsion of the contrast enema, this filling of the terminal ileum by the opaque enema constitutes a distinct complication.

More satisfactory study of the cecum and ascending colon is possible if the patient is allowed first to expel part of the contrast enema, the object being to clear the rectum and sigmoid and to diminish the amount of opaque material in the rest of the colon distal to the hepatic flexure. This is particularly required when the cecum is elongated so that it extends into the true pelvis or when the sigmoid loop turns to the right. With the protected hand or palpator the cecum may be moved about to test its mobility and to make compression for the purpose of bringing out small defects on the anterior or posterior walls. This maneuver also insures complete filling of the cecum and ascending colon and

thorough admixture of the opaque material with any residual nonopaque residues. With such palpation and compression it is possible to detect even small ulcerations, polypi and diverticula on the anterior or posterior walls which might otherwise escape recognition. Compression may also be accomplished by interposing a loofah pad and making pressure with it by pushing on

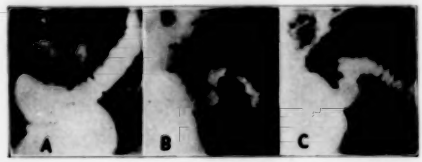

Fig. 12.—Diverticulitis of the sigmoid completely hidden in the usual anteroposterior or postero-anterior film (*A*) but nicely visualized in the oblique projection (*B*). The differentiation between carcinoma and diverticulitis was based on the difference in caliber of the sigmoid at the site of the lesion (*B*) following the administration of antispasmodics (*C*). At operation the surgeon was undecided as to the diagnosis and did a colostomy. Five years later the patient is still in excellent health and the colostomy is still not closed.

the screen. These devices together with appropriate turning of the patient usually permit satisfactory study of the cecum, appendix and terminal ileum. The cecal region is perhaps the least satisfactory of all segments of the colon for study with insufflation because of the confusing shadows resulting from air-filled coils of terminal small bowel, and it is here that the single contrast enema least needs supplementing.

Sometimes the patient expels the enema so completely that it is necessary to make a supplementary injection and partial expulsion before proceeding with the insufflation; but usually the difficulty is that the colon is insufficiently clear of the opaque fluid or that a satisfactory coating of the mucosa is not achieved. It is sometimes best to wait a little while, ten or fifteen minutes, before asking the patient to evacuate, and then he should be advised not to attempt too thorough expulsion of the contrast enema. It is better to evacuate too little and be sent back several times. Too violent expulsive efforts are likely to eliminate the mucosal coating completely. At once, after the proper degree of evacuation, as noted on the screen, has been achieved, another film or two may be exposed and the insufflation made. If the evacuation is still insufficient, the patient may be given a drink of ice water or an injection of double strength solution of posterior pituitary or of pitressin.

It will be apparent to those not personally familiar with the double contrast method that it is very much a time-consuming proposition, and in a busy office it can be employed only when there seems definite indication for it. Simply to inflate every colon after the routine contrast enema and evacuation will result in a high percentage of useless effort; for the resulting films, even though stereoscopic as they should always be, will hardly lend themselves to accurate interpretation unless they have been made with screen guidance as to position and moment of exposure. At best, many of the insufflation films are disappointing. Even when apparent polypoid growths are noted, the examination needs repetition before conclusions are drawn, unless it is possible in the primary examination to turn the patient in such favorable positions and, at time-consuming intervals, to differentiate between polypi, small gas bubbles and retained scybala.

There is another diagnostic pitfall in relation to polypi; viz., small boluses of gas in the third row of haustra (fig. 4). Ordinarily in the flat film one sees only two rows of haustral sacculations, since most of our studies are made with opaque or relatively opaque contrast mediums and without stereoscopic films. But the longitudinal bands of the colon and the haustral contractions form three rows of sacculations, the third one of which tends to accumulate small quantities of air or gas which, by being superimposed on the other shadows, may simulate polypi.

Still another device may aid in recognizing small intraluminal tumors, provided they exceed a centimeter or so in diameter; viz., observation of the contracted colon following expulsion of the contrast enema. This may show a localized fusiform enlargement of the bowel representing the localized bulging of the visualized mucosa where the colonic walls are propped apart by the nonopaque and otherwise invisible tumor mass (figs. 5 and 6).

The mucosal pattern method is also of value in selected cases. Sometimes the mucosal pattern is nicely exhibited spontaneously during the single contrast method or after partial expulsion or after insufflation. For artificial demonstration of the internal relief of the bowel without insufflation, the same special pains must be taken to cleanse the colon as with the preceding methods; then one injects slowly and without overdistention the opaque material (colloidal thorium or other agent selected), after which compression is made and

Fig. 13.—An air injection of the colon after expulsion of the opaque clysma (the combined method, so called), is sometimes valuable in showing up polypi. The definite diagnosis of polypi should not be made even in such a case as this without duplicating the result at another examination by similar technic.

maintained at suspected sites while Potter-Bucky diaphragm films are made for record and further study. Such films are preferably stereoscopic.

The inconvenience of the artificial mucosal relief method is probably out of proportion to its practical importance. To those who are especially devoted to this method, Schwarz remarks that the expensive

umbrathor has an astringent content which probably explains its usefulness. If an ordinary contrast enema is rendered slightly astringent by the addition of 1 per cent tannic acid it seems to answer the purpose equally well at a fraction of the cost. Especially in cancer it has not yet been shown that the demonstration of the mucosal pattern aids materially in the diagnosis. The presence of an intact mucosal relief pattern does not exclude carcinoma, for in some cases, especially the early ones which it is so desirable to recognize, the lesion may make a considerable submucous extension before breaking through the mucosa. More important than the mucosal relief pattern is the constant finding of a circumscribed narrowing of the lumen or encroachment into the lumen, and a delineation of the exact contours of the afferent and efferent stretches of mucosa in the vicinity of the defect. The mucosal pattern method depends chiefly on one's success in coating with the opaque materials the wall of the colon so well that the lateral contours of the mucosal lining are traceable as accurately as though drawn in with a sharp pencil.

55 East Washington Street.

Clinical Notes, Suggestions and New Instruments

THE PRIMARY CUTANEOUS TUBERCULOSIS COMPLEX

Herbert K. Fidler, M.D., University, Ala.

The importance of differentiating between the lesion found in first infection tuberculosis and that resulting from reinfection was recognized first by Ghon [1] in 1912. Since then it has been customary to think of the primary tuberculous lesion, found most frequently in childhood, as confined chiefly to the lung, because most of his cases were of this type. This is probably true; but if the site of initial entrance of the tubercle bacillus is through the skin the resulting lesion differs from the well recognized types of adult skin tuberculosis (verruca necrogenica, lupus vulgaris and tuberculosis colliquativa) in a manner similar to that in which the childhood pulmonary lesion differs from the adult pulmonary lesion. This concept is not new, as Ghon in his original communication reported one case of primary skin tuberculosis as well as several cases in which the site of entry had been the tonsil or bowel. Until recently, however, there has been little attempt to differentiate between the rather characteristic first infection lesion of the skin and that produced by reinfection.

The basis of our dermatologic knowledge of the primary cutaneous complex was laid in 1926 by Brunsgaard.[2] The literature was thoroughly reviewed by Krantz [3] in 1931 and by Michelson [4] in 1935.

Brunsgaard [5] gives the following definition: "The characteristic feature of infection occurring in a previously tubercle free organism is the so-called 'primary complex,' consisting of a primary tuberculous sore plus a definite and often very pronounced swelling of the regional glands. The spreading of the bacilli to the regional glands is frequently shown by a clearly marked lymphangitis. The dominating feature of this symptom complex is the great swelling of the glands, of acute onset, with cascation." The lesion is necessarily confined almost entirely to children, although authenticated adult cases have been reported. The lesion is initiated by some injury to the skin and usually commences as an ulcer with an associated lymphangitis and lymphadenitis. The ulcer is usually small, the edges are raised and slightly undermined and the floor is dark red and covered with fine granulation tissue, from which there comes a thin yellow serous exudate. The surrounding skin is purplish red and indurated. Although it does not differ markedly from an indolent ulcer caused by a streptococcic or staphylococcic infection, it frequently resembles the primary lesion of syphilis, from which it derives the name "tuberculous chancre."

Unlike the reinfection type of skin tuberculosis, the lesion is accompanied by an acute lymphangitis and lymphadenitis similar to that which is found in the primary pulmonary lesion. In a few weeks the ulcer may heal while the regional lymph nodes continue to enlarge, soften and finally break down. Thus,

Section of skin removed from the thumb, showing a tuberculous lesion situated in the dermis. Three tubercles are seen, each consisting of a mass of epithelioid cells, lymphocytes and a few giant cells (× 140).

suppurating tuberculous glands in the groin may be explained by a hitherto unsuspected lesion hidden between the toes, as occurred in a case reported by Stokes.[6] The ulcer may spread by the formation of small lupus-like nodules or, if the ulcer becomes epithelized, it may resemble a small patch of lupus vulgaris.

The diagnosis of the condition is based on the presence of a local ulcerated lesion accompanied by lymphatic involvement, on a previously negative tuberculin reaction which becomes positive and, finally, on biopsy and guinea-pig inoculation of the lesion or regional lymph nodes.

REPORT OF CASE

A white man, aged 25, was engaged on the staff of a tuberculosis sanatorium. In the course of his duties, which included autopsy examinations, there developed at the site of what was first thought to be a mosquito bite on the right thumb a small ulcerated lesion about 5 mm. in diameter. This was accompanied by a rise in temperature to 100.2 F. and an acute lymphangitis which extended from the lesion to the axilla.

From the Department of Pathology, University of Alabama School of Medicine.

1. Ghon, A.: Der primäre Lungenherd bei der Tuberculose der Kinder, Berlin, Urban and Schwarzenberg, 1912.
2. Brunsgaard, E.: Klinische Beiträge zur Pathogenese der Hauttuberculose, Arch. f. Dermat. u. Syph. **152**: 465, 1926.
3. Krantz, W.: Der Tuberculöse Primärkomplex an der Haut, Zentralbl. f. Haut- u. Geschlechtskr. **39**: 1 (Nov. 5) 1931.
4. Michelson, H. E.: The Primary Complex of Tuberculosis of the Skin, Arch. Dermat. & Syph. **32**: 589 (Oct.) 1935.
5. Brunsgaard, E.: The So-Called Primary Complex of Tuberculosis in the Skin, Brit. J. Dermat. & Syph. **46**: 113 (March) 1934.
6. Stokes, J. H.: Primary Inoculation Tuberculosis of the Skin with Metastasis to Regional Lymph Nodes, Am. J. M. Sc. **169**: 722 (May) 1925.

V 10
1937

One of the axillary lymph nodes was enlarged to the size of a walnut and was moderately painful. The lesion on the thumb was slightly raised, red and indurated and from the ulcerated center a thin serosanguineous exudate could be expressed. Repeated darkfield examinations were negative for Spirochaeta pallida and preparations stained for acid-fast organisms were negative.

The lesion remained unchanged and lesser degrees of lymphangitis recurred intermittently for almost two months. The intradermal tuberculin reaction, taken three weeks after the onset of the illness, was strongly positive (four plus) with 0.1 cc. of 1:1,000 old tuberculin.

The possibility of this being a primary tuberculous infection was strongly entertained. Three years previously (1932) the intradermal tuberculin reaction had been negative to 0.1 cc. of 1:1,000 old tuberculin and roentgenograms of the chest revealed no evidence of tuberculosis. Since then the patient had been in good health and a routine chest plate taken in 1934 showed no pulmonary lesion.

Two months after the onset the ulcerated surface became epithelized but there remained a slightly firm, raised, reddish lesion with an irregular margin in which small "apple jelly" nodules about 1 mm. in diameter could be seen on diascopic examination. This lesion grew slowly until in January 1936 (six months after onset) it was 1 by 0.75 cm. The axillary lymph node became large and tender again, and the lymphatics in the arm and forearm became shortened, cordlike and easily palpable, though not tender, and made full extension at the elbow difficult.

At this time the primary lesion on the thumb was removed widely by the cutting cautery and a Thiersch graft from the thigh was applied. By the end of a week the lymphatics were no longer palpable and the axillary lymph node had receded in size.

Microscopic examination of the tissue removed revealed a lesion situated in the dermis and consisting of single and conglomerate foci containing epithelioid cells, lymphocytes and a few giant cells. In the center of some of these masses there was definite caseation. Acid fast organisms could not be found by histologic examination, guinea-pig inoculation or attempts at culturing on artificial mediums.

Three months later (April 1936) the axillary lymph node was removed. It measured 2 by 2 by 1 cm. The cut surfaces showed two pale yellow caseous regions which occupied about one half of the node. The capsule was indistinct and in places the surrounding fat seemed to be infiltrated. Direct smears from the caseous region showed acid fast rods corresponding in number to Gaffky II. Guinea-pig inoculation with this material resulted in the development of tuberculosis.

One year following the onset of the illness the intracutaneous tuberculin reaction was moderate (two plus) to 0.1 cc. of 1:10,000 old tuberculin. There was no demonstrable recurrence of the lesion on the thumb or in the axilla, and the general health of the patient was excellent.

COMMENT

It is difficult to believe that a man, aged 25, who had lived in a large city since childhood and had been engaged in hospital work for a period of four years, should not have had some previous tuberculous infection. The negative tuberculin reaction before the onset of illness indicated that he was not allergic to the organism, and that he had little resistance was evidenced by the acute ascending character of the lesion with no apparent effort to fix the organisms at the primary site. It is well known that after a childhood infection recovery may be followed years later by a loss of allergy. So far there has been little or no evidence to show that acquired resistance also vanishes. Rich and McCordock [7] state that they have seen a few adult patients with pulmonary tuberculosis in whom the anatomic lesions and course resembled the primary infection. They suggest the possibility of this being the result of a fresh infection from without in an individual who, if ever having had resistance, has completely lost it. They continue to say, however, that the infrequency of reactivation of the remaining bacilli in the pulmonary and node lesions of the childhood "primary complex" is strong evidence that resistance once acquired in childhood is rarely completely lost. Although the point is virtually impossible to prove, it seems quite possible that the case which is reported here is not a true first infection but has occurred in an individual who has lost any allergy and resistance that might have been produced by a previous infection, and that reinfection has resulted in a lesion identical with the "primary complex."

It is interesting to note the change in type of the lesion that took place as the patient was apparently developing resistance to the infection. The acute lymphangitis subsided and after two months the lesion on the thumb changed from an open ulcerated "tuberculous chancre" to a more localized productive type of lesion resembling a common type of adult reaction—lupus vulgaris.

SUMMARY

This case seems to fulfil all the prerequisites for a diagnosis of primary cutaneous tuberculosis complex in an adult. The onset was marked by an acute ulcerative lesion on the thumb with an accompanying lymphangitis and axillary lymphadenitis. The intradermal tuberculin reaction, which had previously been negative, became strongly positive. The histologic picture of the local lesion resembled tuberculosis, and the tubercle bacillus was obtained from the axillary lymph node.

7. Rich, A. R., and McCordock, H. A.: An Inquiry Concerning the Rôle of Allergy, Immunity and Other Factors of Importance in the Pathogenesis of Human Tuberculosis, Bull. Johns Hopkins Hosp. 44: 273 (May) 1929.

COMPLETE COMPOUND DISLOCATION (INTERNAL LATERAL) OF THE ANKLE JOINT WITHOUT FRACTURE, WITH PRIMARY HEALING

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BIRMINGHAM, ALA.
AND
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A complete dislocation, simple or compound, at the tibiotalar joint without a fracture is extremely rare.[1] A lesion of this type when it does occur is usually compound. The ligaments about the ankle are usually stronger than the malleoli, and for this reason a fracture of one or both of the malleoli usually

Fig. 1.—Complete compound dislocation (internal lateral) of the left ankle joint. Note that the lower tibiofibular articulation is intact.

accompanies such an injury, since the bone in most instances breaks before the ligaments will rupture.

Böhler [2] states that a lateral dislocation of the ankle without a fracture of one or both of the malleoli is possible only when the joint between the tibia and the fibula is broken. In the case reported here a separation did not occur at the tibiofibular joint, as shown by roentgenograms and by open inspection of the joint.

Complete dislocations of the ankle joint are classified as follows, according to their order of frequency: (*a*) posterior, (*b*) anterior, (*c*) external lateral, (*d*) internal lateral (medial) and (*e*) divergent or upward.

From the Orthopaedic Clinic of the Employees' Hospital, Fairfield, Ala.

1. Key, J. A., and Conwell, H. E.: Management of Fractures, Dislocations and Sprains, St. Louis, C. V. Mosby Company, 1934.

2. Böhler, Lorenz: Treatment of Fractures, fourth English edition, translated by E. W. Hey Groves, Baltimore, William Wood & Co., 1935.

The case here reported is of interest because:

1. It is a rare lesion, the only one of its type we have seen.
2. It definitely proves that ligaments about a major joint do rupture in certain instances without pulling away the bone or periosteum to which they are attached.
3. There was no associated fracture.
4. The wound healed without infection.
5. The end result was excellent.

REPORT OF CASE

R. L. C., a railroad engineer, was admitted to the Employees' Hospital March 7, 1936, shortly after he had been in a railroad accident in which he received a serious injury to the left ankle and multiple steam burns to the lower extremities.

Examination on admission revealed a complete compound medial dislocation of the left ankle joint. The wound was very dirty, and particles of coal were ground into the tissues. The lower articular surfaces of the tibia and fibula were plainly visible, protruding from the wound (fig. 1). The foot was cyanotic and cold. Pulsations in the vessels of the foot were absent. The patient also had second degree burns about both ankles and on the right leg and back.

A roentgenogram was made which revealed a complete medial dislocation at the tibiotalar joint, with no associated fracture (fig. 2).

Operation was performed under general anesthesia. The wound was thoroughly cleansed and débridement was performed. The dislocation was reduced simply by traction on the foot and countertraction on the flexed leg. The ligaments on the open side of the ankle were reapposed and sutured with

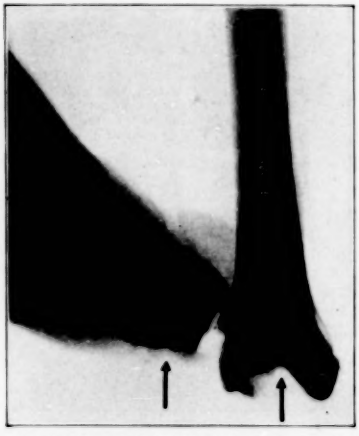

Fig. 2.—Anatomic deformity with no fracture present.

interrupted chromic catgut. The skin was sutured with silkworm gut and a small rubber drain was placed in the wound. This was removed forty-eight hours later.

Owing to the fact that the patient had a second degree burn over the ankle, a Steinmann pin was applied through the os calcis and traction used, reduction being maintained thereby. A gauze dressing was kept on the wound, which was inspected daily until healing of the compound wound and most of the acuteness of the burns had subsided. It was desirable that a plaster cast be applied as soon as possible in order to relieve undue stretching of the torn ligaments about the ankle joint as the result of the traction. A cast was therefore applied about two weeks following injury, when the burns had improved sufficiently to warrant the application of it. The cast extended from the base of the toes to the upper third of the thigh. The Steinmann pin was then removed from the os calcis. A good sized window was cut away over the compound wound, which had healed within about three weeks following injury as well as the burns.

The original cast was removed one month following its application, at which time another cast was applied to the foot and leg, extending from the base of the toes to the upper third of the leg. This cast was removed two weeks later. The patient was then fitted with a brace attached to the shoe heel, with a joint at the ankle. He began walking with this support and was discharged from the hospital to continue active weight bearing without the aid of crutches.

Fig. 3.—Appearance three months following injury, showing full functional results.

He was last seen in the orthopedic out clinic June 5, 1936, when he was walking without pain or discomfort, except for a slight arch strain, which was relieved with a sponge rubber arch support. Roentgenograms showed the tibiotalar joint to be normal. The ankle was not swollen and there was full motion with normal stability (fig. 3). He returned to his original work without any disability. He was advised to wear the metal brace for another month following this examination.

215 Medical Arts Building.

V 10
1937

A SIMPLE PLIABLE FINGER SPLINT

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During the course of my intern service at Charity Hospital, New Orleans, I came in contact with numerous infections and disorders of the phalanges, both in the surgical wards and in

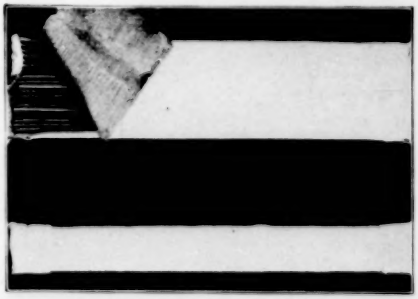

Fig. 1.—Detailed construction of splint.

the outpatient dispensaries. I found that, in treating these conditions, immobilization for a short period with the use of a simple finger splint in addition to the usual hypertonic wet dressings shortened the duration and intensity of symptoms and hastened the healing process.

I have done extensive reading among the numerous articles dealing with finger splints, and so far I find that the splint generally used in such conditions is the ordinary tongue depressor. After using this splint several times on miscellaneous infections about the finger tip, I noticed certain disadvantages:

1. The splint was hard and, if applied tightly, became painful to the patient after several hours.
2. It will not conform to a rounded surface, as it is not flexible.
3. It required padding.
4. It is very cumbersome to use on the hands of children.

Seeing the need for a simple splint that could be made with materials to be had in any physician's office, I finally devised what I think is a simple pliable finger splint. The splint consists of a parallel row of wooden applicators impinged on a layer of adhesive tape with a similar layer superimposed. A small margin is left on each side and folded over, making the splint water tight.

For my own use I have constructed two sets of splints, using one-inch and two-inch widths of adhesive tape. The one-inch splint may be used in infections of the finger tip, such as felons, paronychias and nail avulsions. In dealing with a felon it is advisable that the splint be applied to the volár surface of the finger, thus protecting the sensitive tip from trauma. In dealing with paronychias and nail avulsions the order is reversed, the splint being applied to the dorsal surface.

This splint can be used satisfactorily with wet dressings and need not be removed in order to soak the infected finger. The splint is water proof and does not become soggy or fall apart.

I also found that the one-inch splint could be used in simple phalangeal fractures without displacement of the fragments, when only immobilization is desired and traction is unnecessary. In using the full length one-inch splint in this manner, a satisfactory immobilization at the metacarpophalangeal joint is secured. When additional strength is desired, both an anterior and a posterior splint may be used, held securely in place with one-inch gauze bandage.

The two-inch splint is used for immobilizing the thumb and little finger, serving a double purpose both for immobilization and for abduction.

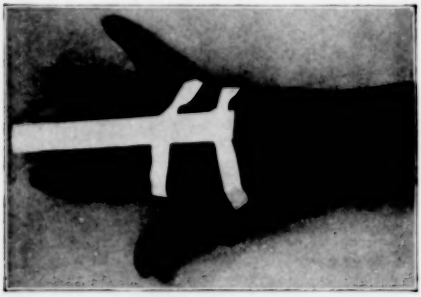

Fig. 2.—One-inch anterior splint.

Fig. 3.—Lateral view showing anterior one-inch splint.

ADVANTAGES

1. The materials used in this splint are cheap and easily available.
2. It is slightly elastic and also molds to fit the curved surface of the finger.

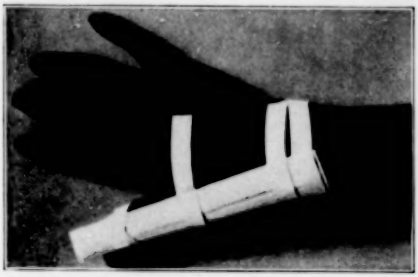

Fig. 4.—Two-inch splint for abduction and immobilization of thumb.

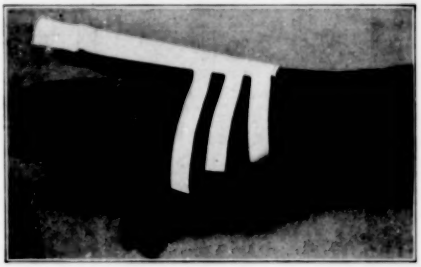

Fig. 5.—Two-inch splint for immobilization and abduction of little finger.

3. The splint can be cut to the desired length with ordinary bandage shears, the cut edge being then covered with a small strip of adhesive tape.
4. It is light and neat and requires no padding.
5. It fits snugly and is easily held in place with one-inch gauze bandage.

THE MYXEDEMA HEART

WILLIAM H. ALLEN, M.D., FORT SAM HOUSTON, TEXAS

Since Zondek [1] first reported myxedema heart in 1918 there has been an increasing number of cases recorded. In 1925 Fahr [2] could find but eight cases with roentgenologic and electrocardiographic studies. At that time he described three cases that he had seen during the past year, one of which was reported in detail and two in outline. In 1932 he [3] described the further progress of one of the preceding cases and reported five additional cases that he had seen in the preceding eight years. Of seventeen cases of severe and moderately severe myxedema, thirteen showed signs and symptoms of heart failure, of which five were severe.

Willius and Haines [4] in 1925 referred to Fahr's first paper and reported a study of 162 cases of high grade myxedema

From the Medical Service of the Station Hospital, Fort Sam Houston, Texas.

Read before the Bexar County Medical Society, San Antonio, Texas, Nov. 5, 1936.

1. Zondek, H.: Das Myxödemherz, München. med. Wchnschr. **65**: 1180-1182, 1918.
2. Fahr, George: Myxedema Heart, J. A. M. A. **84**: 345-349 (Jan. 31) 1925.
3. Fahr, George: Myxedema Heart, Am. Heart J. **8**: 91-101 (Oct.) 1932.
4. Willius, F. A., and Haines, S. F.: The Status of the Heart in Myxedema, Am. Heart J. **1**: 67-72 (Oct.) 1925.

without finding a single characteristic case of myxedema heart. One hundred and forty-eight (91 per cent) were free of subjective or objective signs of organic cardiovascular disease; eleven (7 per cent) presented evidence of such organic disease but only one was appreciably influenced by thyroid therapy. However, in twelve cases the electrocardiographic changes disappeared after treatment with thyroid. Willius[5] recently stated that there was little doubt that occasionally the syndrome is observed in myxedema and that the heart participates in the myxedematous process, but he objects to the term "myxedema heart" on the ground that there has been no necropsy report of an authentic case. Excellent reviews of the literature with added cases have recently been reported by Lerman, Clark and Means,[6] and by Ohler and Abramson.[7]

The characteristic features have been a marked increase in the transverse diameter of the heart, feeble pulsations as viewed

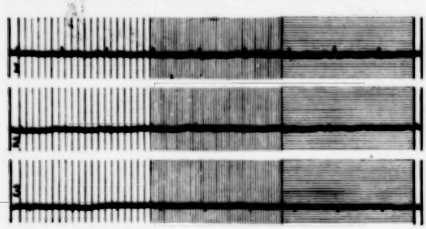

Fig. 1.—Electrocardiogram of June 17, 1934, before administration of thyroid. Basal metabolic rate —38 per cent.

by the fluoroscope, and low amplitude of complexes with flattening of the P waves and with low or inverted T waves. Abnormal axis deviation has also commonly occurred.

Shortness of breath is a common complaint and a few patients have precordial pain. Moderate to severe anemia of the hypochromic type and uterine hemorrhages have been frequently reported. A number of the cases have shown elevation of blood pressure, though these have usually been associated with arteriosclerosis or a history of preexisting hypertension. The changes in blood pressure following treatment have been variable.

Fig. 2.—Teleoroentgenographic study, Aug. 4, 1934. Transverse diameter of heart 18.5 cm.; of chest 26 cm.

REPORT OF CASE

Mrs. R. L. W., a married woman, aged 42, was first admitted to the surgical service March 7, 1934, with a history of persistent uterine hemorrhage of two months' duration. The uterus was moderately large and it was thought that there was possibly an intramural fibroid tumor. Blood count showed hemoglobin 30 per cent, red blood cells 2,240,000, white blood cells 6,700, differential count normal. The Kahn and Wassermann tests were negative.

The patient received a transfusion of 200 cc. of whole blood. An exploratory laparotomy was refused. On this admission there is no notation of cardiac abnormality, nor was an electrocardiogram made. The patient was discharged March 23 at her own request.

May 7 she was admitted to the medical service, complaining of marked weakness, persistent diarrhea, with burning pain in the epigastrium, dermatitis on the hands, wrists and elbows, and numbness of both hands. Examination showed marked

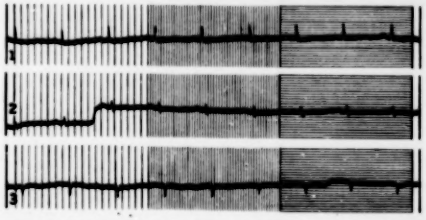

Fig. 3.—Electrocardiogram of April 5, 1935, after administration of thyroid. Basal metabolic rate +21 per cent.

pallor and the dermatitis already noted. The pulse was of poor volume and the blood pressure 84 systolic, 70 diastolic. The heart showed a marked increase in the transverse diameter. The sounds were weak and distant. The rhythm was regular. No murmurs were heard. There was tenderness over the whole abdomen, with some ascites and hydrothorax. The blood count revealed hemoglobin 30 per cent, red blood cells 2,200,000, white blood cells 2,350, differential normal. Examination of the urine and feces was negative. Gastric analysis showed absence of free hydrochloric acid.

Blood sugar was 90 mg. and nonprotein nitrogen 30 mg. per hundred cubic centimeters. A tentative diagnosis of pellagra and severe hypochromic anemia was made because of this and uterine hemorrhages. She was placed on a high vitamin diet, supplemented by brewers' yeast and viosterol. Iron and ammonium citrate 1 Gm. three times a day and intramuscular injections of liver extract and digitalis were also given. Roentgen treatment was administered over both ovaries and to the right hand, the left hand being used as a control. A blood transfusion of 250 cc. by the direct method was given on May 28, the blood count having remained essentially the same up to this time. No improvement followed the transfusion. June 17 an electrocardiogram showed low voltage complexes with flattened P and T waves and left axis deviation (fig. 1). The appearance of the electrocardiogram and the large size of the heart suggested myxedema. The basal metabolic rate was found to be —38 per cent. She was placed on thyroid, 130 mg. daily. Improvement in her condition was rapid. July 4 the hemoglobin was 55 per cent, red blood cells 2,930,000, white blood cells 12,200, with normal differential count. By July 10 the hemoglobin had increased to 65 per cent. The patient was discharged to the care of the outpatient service, July 13. The dermatitis had entirely cleared, no difference having been noticed in the rate of recovery in the two hands; the ascites and hydrothorax were gone, and there was a marked improvement in strength and mental outlook. August 4 the basal metabolic rate was —8 per cent. On this date a 2 meter film showed a total transverse diameter of the heart of 18.5 cm. with a transverse diameter of the chest of 26 cm. (fig. 2).

Fig. 4.—Teleoroentgenographic study, May 17, 1935. Transverse diameter of heart 12 cm.; of chest 26 cm.

5. Willius, F. A.: Personal communication to the author.

6. Lerman, J.; Clark, R. J., and Means, J. H.: The Heart in Myxedema; Electrocardiograms and Roentgen-Ray Measurements Before and After Therapy, Ann. Int. Med. **6**: 1251-1271 (April) 1933; Further Observations on the Heart in Myxedema, ibid. **8**: 82-84 (July) 1934.

7. Ohler, W. R., and Abramson, Julius: The Heart in Myxedema, Arch. Int. Med. **53**: 165-187 (Feb.) 1934.

V 10
1937

The patient left the city and was not heard from until her readmission to the surgical service March 24, 1935, at which time she gave a history of having discontinued treatment and of a sudden onset of profuse menorrhagia on March 8, which had continued up to the time of readmission. Her condition was critical. She was profoundly prostrated and partially disoriented. The uterine flow was free and serous, with very little color. Her pulse was 112; blood pressure 78 systolic, 40 diastolic. The heart sounds were distant. There was tenderness over the uterus, which was moderately enlarged and firm. The cervix was enlarged and a little softer than normal. Blood count was hemoglobin 25 per cent, red blood cells 1,070,000, white blood cells 14,800. She received transfusions of 300 cc. of whole blood by the direct method on the 25th and 30th. Following these the hemoglobin increased to 40 per cent and the red cells to 2,420,000. There was a marked increase in the transverse diameter of the heart, the apex being visible in the fifth interspace in the anterior axillary line (12 cm. from the midline); the sounds were of fair quality; no murmurs were heard. The lungs, abdomen and extremities were normal. She was again placed on liver extract intramuscularly, iron and ammonium citrate, and thyroid 130 mg. twice a day. April 5 an electrocardiogram showed rate 82, rhythm regular, auriculoventricular conduction time 0.16 second, and all complexes of low voltage but of greater amplitude than in the one of June 17, 1934. There was also a left axis deviation (fig. 3). April 8 the basal metabolic rate was —21 per cent; May 1 it

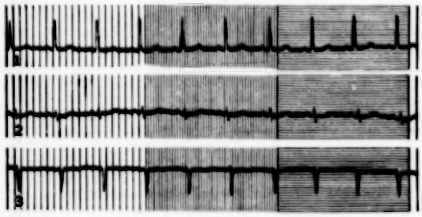

Fig. 5.—Electrocardiogram of May 17, 1935, after administration of thyroid. Basal metabolic rate —3 per cent.

was plus 9 per cent. On that date the hemoglobin was 75 per cent, red blood cells 3,980,000, and white blood cells 10,200; the blood pressure was 120 systolic, 84 diastolic. Supravaginal hysterectomy was performed under spinal anesthesia May 2. Sections showed an endometrioma of the left cornu. Surgical recovery was uneventful. A 2 meter film May 17 disclosed that the transverse diameter of the heart had decreased from 18.5 cm. to 12 cm. (fig. 4). An electrocardiogram showed increase in voltage with marked left axis deviation (fig. 5). The basal metabolic rate the same date was —3 per cent. She was discharged May 18. She was last seen July 2, 1936, at which time her condition was excellent. The transverse diameter of the heart was 12 cm., the sounds were clear, and there were no murmurs. The blood pressure was 120 systolic, 84 diastolic. She had been taking thyroid 32 mg. daily but no other treatment.

COMMENT

This case presents the cardinal features of the so-called myxedema heart, characterized by a marked increase in diameter, feeble pulsation, and electrocardiographic complexes of low voltage with flattened P and T waves. Marked decrease in size of the heart, improvement in function and change in the electrocardiogram followed treatment with thyroid. Whether hysterectomy was justified in view of the frequent occurrence of uterine hemorrhage in such cases is questionable. It was done in view of the critical condition of the patient and her failure to continue the thyroid treatment following her second discharge from the hospital. In this case it would appear that the source of the hemorrhage was the endometrioma. Whether the hypothyroidism was a factor is unknown, as is also the relationship of the pellagra-like lesions and symptoms.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

COLSON SAFETY INHALATOR, MODEL NH-11, ACCEPTABLE

Manufacturer: The Colson Corporation, Elyria, Ohio.

This device is recommended as an adjunct in the treatment of nasal or respiratory disturbances and for inhalations of vapor or medicated vapor as prescribed by the physician. The heating element, internal connections, and so on, are enclosed in the cabinet, size 20½ inches long and 8¼ inches wide over the handles. The height with the tube removed is 18½ inches. The power required is 500 watts and 115 volts. The flexible tube is 32 inches long and terminates with a nozzle 9 inches in length. It weighs 12 pounds empty. The steel cabinet is finished in ivory baked-on enamel. The interior parts in contact with the water or medicine are seamless copper, nickel plated.

Colson Safety Inhalator Model NH-11.

The firm claims that this unit is an improvement over the former inhalator accepted by the Council and described in THE JOURNAL, May 26, 1934, page 1760.

If the water supply should become exhausted through an oversight, an automatic thermal switch cuts off the electric current, the red signal light glows and the reset switch is released. The inhalator cannot be put back in operation until it has been cooled to normal temperature by replenishment of the water supply. When the unit is set on "high heat" the water supply will last for approximately eight hours. If on low heat, the water supply continues for approximately sixteen hours. It is so arranged that a medicament cup may be placed directly over the rising steam, thus affording an opportunity for the volatilized medicine to mix with the steam.

The inhalator was investigated in a clinic acceptable to the Council. Its performance and operation were regarded as satisfactory.

In view of the favorable report, the Council on Physical Therapy voted to include the Colson Safety Inhalator, Model NH-11, in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

NEO-IOPAX (See New and Nonofficial Remedies, 1936, p. 256).

The following dosage form has been accepted:

Ampoule Solution Neo-Iopax, 10 cc.: Each ampule contains neo-iopax, 7.5 Gm., dissolved in sufficient sterile distilled water to make 10 cc.

DEXTROSE (See New and Nonofficial Remedies, 1936, p. 289).

The following dosage forms have been accepted:

The Lakeside Laboratories, Inc., Milwaukee.

Ampoules Dextrose (d-Glucose) 5 Gm., 10 cc.: Each ampule contains dextrose (*d*-glucose) 5 Gm., in distilled water to make 10 cc.

Sterile Solution Dextrose (d-Glucose) in Rubber Stoppered Vials 25 Gm., 50 cc.: Each ampule contains dextrose (*d*-glucose) 25 Gm., in distilled water to make 50 cc.

Sterile Solution Dextrose (d-Glucose) in Rubber Stoppered Vials, 50 Gm., 100 cc.: Each ampule contains dextrose (*d*-glucose) 50 Gm., in distilled water to make 100 cc.

TETANUS TOXOID, ALUM PRECIPITATED (See The Journal, May 16, 1936, p. 1735; Revised Supplement to New and Nonofficial Remedies, 1936, p. 16).

Mulford Biological Laboratories, Sharp & Dohme, Philadelphia and Baltimore.

Tetanus Toxoid, Alum Precipitated, Refined.—Marketed in packages of two 1 cc. vials (one immunization treatment); and in packages of one 10 cc. vial (five immunization treatments).

ANTIPNEUMOCOCCIC SERUM, TYPE II (See New and Nonofficial Remedies, 1936, p. 374).

The National Drug Co., Philadelphia.

Antipneumococcic Serum (Felton) Type II, Refined and Concentrated.—Prepared by immunizing horses with intravenous injections of virulent and avirulent pneumococci, and subcutaneous injections of the supernatant broth culture mediums in which the pneumococci had been grown. When test bleedings show the serum to have reached a sufficient degree of potency, the horses are bled aseptically and the serum is refined and concentrated by a method similar to that used for antitoxins. The potency of the product is determined and expressed in terms of the unit of Lloyd D. Felton. Marketed in packages containing 10,000 and 20,000 units of type II pneumococcus antibodies.

PHENOLSULFONPHTHALEIN (See New and Nonofficial Remedies, 1936, p. 194).

Phenolsulfonphthalein-"National."—A brand of phenolsulfonphthalein-U. S. P.

Manufactured by the National Aniline and Chemical Co., Inc., New York. No U. S. patent or trademark.

LIVER EXTRACT (INTRAMUSCULAR)-PARKE, DAVIS & CO. (See New and Nonofficial Remedies, 1936, p. 281).

The following dosage form has been accepted:

Solution Liver Extract (Intramuscular)-P. D. & Co., 10 cc. vials.

Council on Foods

The Council on Foods has authorized publication of the following report. Franklin C. Bing, Secretary.

THE NUTRITIONAL SIGNIFICANCE OF THE CURD TENSION OF MILK

I. The Production and Properties of "Soft Curd" Milks

Although milk ordinarily is considered a fluid, it clots soon after it reaches the stomach and should be thought of as a "solid food." The size and degree of toughness of the clots are considered by many authorities to be important factors in the gastric digestion of milk. The character of the milk curd has claimed the attention of pediatricians for many years. Human milk forms a soft, almost fluid, coagulum in the stomach, whereas untreated cow's milk tends to form compact, cheesy masses. Some of the curds formed from raw cow's milk, observed by Brennemann [1] in a subject who could voluntarily regurgitate, measured 4 or 5 inches in length; others were apparently too large to pass the throat and could be recovered only after the digestive processes had reduced their size. If the milk was first boiled, the curds formed were smaller and more friable and appeared to be more quickly digested. Since the time of Brennemann's pioneer experiments, laboratory methods have been devised for the quantitative determination of curd tension. Considerable information has been gathered on the effect of different processes on the nature of the curd. The purpose of the present report is to summarize the available information on the production and properties of milk of "low curd tension."

NATURAL SOFT CURD MILK

Most observations on soft curd milk have been made possible by the development of methods for the determination of curd tension. Hill's method [2] has been improved by Cole [3] and by Miller.[4] Stated briefly, the method consists of coagulating the milk in a jar by a solution of pepsin and, usually, calcium chloride, and the force required to pull or push a horizontal knife blade through the curd is read on a spring balance. The curd tension thus is measured in terms of grams of force under standard conditions. Hill defines soft curd milk as milk having a curd tension of 20 Gm. or less, while some other investigators allow an upper limit of 33 Gm. Differences in coagulant and in size and design of knife produce noncomparable results.[2] Such variations in definition and methods of determination may account for some of the conflicting reports of the properties of soft curd milk.

The curd tension of untreated cow's milk may be found as high as 200 Gm. Certain cows, however, produce milk that has a much lower curd tension. This milk is sometimes referred to as "natural" soft curd milk. The production of soft curd milk appears to be an individual peculiarity of certain cows, which has been observed to persist from one lactation period to the next.[5] While extremes of curd tension have been observed in the milk of all breeds of cattle studied, the proportion of cows giving soft curd milk is higher in some breeds than in others.[6] The following breeds are listed in the order of their decreasing importance as producers of soft curd milk: Holstein, Ayrshire, Guernsey and Jersey.[7] Although curd tension is fairly constant from day to day, it is high at the beginning of the lactation period and usually higher or occasionally lower at the end of the period.[8] Several investigators have observed higher curd tensions during the winter months, particularly in the very cold weather, than in the spring and summer.[9] It is interesting to note that some types of subclinical mastitis in cows have been found to be associated with the production of abnormal milk of low curd tension.[10]

Natural soft curd milk has been found by several investigators to be low in total solids,[8] solids-not-fat,[11] fat,[12] and protein,[11] especially casein.[13] The difference in casein concentration of soft and hard curd milk has been said to account for the greater part of the variation in curd tension.[14] The caseins of hard and soft curd milks have not been found to differ in iso-electric point or amino acid makeup.[15] In soft curd milk, calcium and phosphorus are present in normal ratio but smaller amounts;[5] total ash has been reported normal [16] and low.[5] Natural soft curd milk in general is less concentrated milk; its lower caloric value has been confirmed by clinical experience.[17] Buffer capacity, which depends largely on casein and phosphate, and titratable acidity, are low in soft curd milk.[11] Curd tension does not appear to be related to any of the following characteristics: lactose concentration,[15] *Pu*,[18] rate of rennin coagulation,[8b] bacterial flora,[8b] freezing point [12] or surface tension.[5] According to several investigators the casein content is the sole or principal difference between naturally hard and soft

1. Brennemann, Joseph: Boiled versus Raw Milk, J. A. M. A. **60**: 575 (Feb. 22) 1913.

2. Hill, R. L.: A Decade and a Half of Soft-Curd Milk Studies, Circ. 101, Utah Agr. Exper. Sta., 1933.

3. Cole, A. P.: New Apparatus for Determining Curd Character of Milk, Milk Plant Monthly **24**: 24 (Jan.) 1935.

4. Miller, Donald: The Determination of Curd Tension by the Use of Hydrochloric Acid-Pepsin Coagulant, J. Dairy Sc. **18**: 259 (April) 1935.

5. Doan, F. J., and Welch, R. C.: Soft-Curd Milk, Tech. Bull. 312, Pennsylvania Agr. Exper. Sta., 1934.

6. Buckley, S. S.: The Physical Character of the Curd of Milk from Different Breeds as an Index of the Food Value of Milk: Studies of the Peptid Content of Milk, Bull. 184, Maryland Agr. Exper. Sta., 1914, cited by Doan and Welch.[5] Hill, R. L.: The Physical Curd Character of Milk and Its Relationship to the Digestibility and Food Value of Milk for Infants, Bull. 207, Utah Agr. Exper. Sta., 1928.

7. Riddell, W. H.; Caulfield, W. J., and Whitnah, C. H.: Normal Variations in the Curd Tension of Milk, J. Dairy Sc. **19**: 157 (March) 1936.

8. (a) Berry, M. H.: Soft Curd Studies, Milk Plant Monthly **23**: 30 (July) 1935. (b) Morris, Myrl, and Richardson, G. A.: The Production and Use of Soft Curd Milk, J. Pediat. **3**: 449 (Sept.) 1933. Doan and Welch.[5] Hill.[5] Riddell, Caulfield and Whitnah.[7]

9. Doan and Welch.[5] Hill[5] Morris and Richardson.[5]

10. Hansen, H. C.; Theophilus, D. R.; Atkeson, F. W., and Gildow, E. M.: Influence of Mastitis on Curd Tension of Milk, J. Dairy Sc. **17**: 257 (March) 1934, through Exper. Sta. Rec. **71**: 692 (Nov.) 1934. Doan and Welch.[5]

11. Doan and Welch.[5] Morris and Richardson.[5]

12. Weisberg, S. M.; Johnson, A. H., and McCollum, E. V.: Laboratory Studies on the Chemistry of Soft Curd Milk, J. Dairy Sc. **16**: 225 (May) 1933. Doan and Welch.[5]

13. Espe, D. L., and Dye, J. A.: Effect of Curd Tension on the Digestibility of Milk, Am. J. Dis. Child. **53**: 62 (Jan.) 1932. Doan and Welch.[5] Riddell, Caulfield and Whitnah.[7] Morris and Richardson.[5] Weisberg, Johnson and McCollum.[12]

14. Espe and Dye.[13]

15. Weisberg, Johnson and McCollum.[12]

16. Hansen, Theophilus, Atkeson and Gildow.[10]

17. Elias, H. L.: Soft Curd Milk, Am. J. Dis. Child. **44**: 296 (Aug.) 1932.

18. Doan and Welch.[5] Morris and Richardson.[5] Weisberg, Johnson and McCollum.[12]

V 10
1937

curd milks.[19] Determinations of conductivity and viscosity carried out by Weisberg, Johnson and McCollum[12] indicate, however, that "the suspensoid phase differentiates a soft curd milk from a hard curd milk," that the fat, casein and calcium phosphate, by their concentration and manner of dispersion, control the curd character. This relationship may be explained in terms of coagulating centers, the number of which is affected by concentration of casein and interruption of micelles by fat globules. Another explanation is the adsorption of casein at the surface of the fat globules. The effectiveness of certain processes which reduce curd tension lends some support to the view of Weisberg, Johnson and McCollum of the factors that control curd tension in untreated milk.

MODIFICATION OF CURD BY VARIOUS TREATMENTS

Common methods of treating milk for infant feeding, such as dilution, heat treatment, homogenization, addition of acids or alkalis, removal of calcium, and the addition of cereal waters, all have in common the effect of reducing the curd tension of milk. Whether or not the product will have a curd tension of 30 Gm. or less depends on the initial curd tension and the kind and degree of treatment.

Dilution.—Dilution with water or whey has been found to lower curd tension to a degree not strictly proportional to the reduction of casein content.[20]

Heat.—The result of heat treatment depends on the temperature and duration of heating. Pasteurization ordinarily has a negligible effect.[21] While heating to 160 F. causes little change, a temperature of 180 F. reduces the curd tension according to the time of heating.[22] Boiling for five minutes causes marked attenuation of the curd.[23] The heat treatment involved in the production of evaporated, sweetened condensed and powdered milks probably assures a soft curd in these products, though variations in curd texture have been noted.[24] The effect of heat on curd tension is thought to be due to partial denaturation of the proteins.[25]

Homogenization.—Homogenization can be produced by forcing milk through minute openings under high pressure. The fat is finely divided by this process, remains suspended uniformly throughout the milk and does not form a cream layer. The softness of the curd of homogenized milk bears out the view of Weisberg, Johnson and McCollum[12] that the state of dispersion of the fat and casein is an important factor in determining curd character. About 2 per cent of the casein normally is adsorbed on the surface of the fat globules, but after homogenization 25 per cent is so held,[26] owing to the greater surface offered by the smaller fat globules. In line with Weisberg's view, it has been found that skim milk shows no change in curd tension when passed through a homogenizer,[5] presumably because its fat content is too low to afford significant increase in surface. Evidence of theoretical interest is the effect of intense sonic vibrations in reducing curd tension.[27] Sound waves passing through milk, from one electrical plate to another, cause a dispersion of fat and increased surface for casein adsorption similar to that effected by homogenization.

The conditions of homogenization that determine the degree to which curd tension is lowered are initial curd tension, and temperature and pressure of processing. The higher the inital curd tension, the greater is its reduction by homogenization.[28] A processing temperature of 165 F. has been found to be more effective in lowering the tension of the curd than 120 or 145 F.,[29] but probably the most effective method involves preheating to 180 F. followed by cooling to 100 F. and homogenization at the latter temperature.[5] Increased pressure of homogenization up to 2,000 or 3,000 pounds per square inch increases the effect on curd tension,[28] but there is said to be little practical value in the use of pressures above 2,500 pounds per square inch.[29] A second processing does not further affect the character of the curd, which is fixed permanently by one treatment.[29]

The study of the effect of these physical methods of treating milk demonstrates the importance of the conditions of treatment. The fact that milk has been heated or homogenized is no assurance that it falls within the soft curd range unless the initial curd tension and conditions of processing are known to be suitable. Thus, while evaporated, condensed and powdered milks usually have soft curds, "homogenized" or "heated" milks may show a higher curd tension.

Other Methods.—Modification by chemical means such as the addition of acids or alkalis and the removal of soluble calcium has been more or less widely used. The addition of either acids or alkalis reduces curd tension. The removal of calcium ions may be effected by the addition of citrate as part of the feeding formula, or by commercial treatment of acidified milk with one of the zeolites which gives up sodium or potassium in exchange for calcium. The zeolite or base-exchange method removes some of the phosphorus and about 20 per cent of the total calcium of the milk and is supposed to prevent coagulation in the stomach.[30] Such milk would not form a clot with rennin. However, evidence for the curd character of milk treated by base exchange is too slight to justify definite conclusions. Claims for the unimpaired nutritive value of this product despite its lower calcium content are based on a study of the calcium balance of one infant.[31] Cereal waters, by virtue of their starch content, inhibit the formation of large curds,[32] perhaps because the colloidal film formed on the surface of the curds prevents the coalescence of small curds into large ones.[33] Gelatin, however, appears to have little effect on curd texture but the evidence is somewhat conflicting.[34] Sugars have been found not to affect the curd.[32] Milk coagulated with rennin and shaken to form a smooth, slightly thickened liquid has been observed to form soft curds in the stomach.[32]

SUMMARY

Interest in the character of the curds formed by milk in the stomach has led to the development of laboratory methods for the quantitative measurement of curd tension. There is unfortunately no precise and generally accepted definition of what standards a milk must attain before it merits the designation of "soft curd." Large individual differences in curd tension may be observed in untreated milk from different cows. Natural soft curd milk appears to be a less concentrated milk, having a relatively low content of fat, casein and calcium phosphate. Pasteurization of milk has little effect on the nature of the curd, but softening of the curd may be accomplished by a great variety of methods. These include simple modifications used in the preparation of many infant feeding mixtures, for example, boiling (and it is the opinion of the Council that all cow's milk used for the preparation of infant feeding mixtures should be boiled), dilution, addition of acids or alkalis and the addition of various cereal waters. Removal of ionizable calcium is said to effect the softening of the curd. Homogenization of whole milk usually lowers the curd tension. Commercial methods of preserving milk involving evaporation or drying likewise usually yield a product that exhibits a low curd tension.

19. Hill.[5] Doan and Welch.[6] Riddell, Caulfield and Whitnah.[7] Espe and Dye.[32]
20. Doan and Welch.[6] Espe and Dye.[32]
21. Brennemann.[1] Doan and Welch.[6] Hill.[8]
22. Doan and Welch.[6] Berry.[9]
23. Brennemann.[1] Doan and Welch.[6]
24. Courtney, Angelia M.: Some Differences in the Behaviour of Raw, Pasteurized, Boiled, Evaporated and Dried Milk at the Hydrogen Ion Concentration of the Stomach, Canad. M. A. J. **17**: 919 (Aug.) 1927.
25. Palmer, L. S.: The Effect of Heat on the Calcium Salts and Rennet Coagulation of Cow's Milk, Proc. Soc. Exper. Biol. & Med. **19**: 137 (Dec.) 1921.
26. Wagner, G.: The Change of Some Physical Properties of Cow's Milk with Changes in the Degree of Dispersion of Its Dispersed Phases, Kolloid Ztschr. **15**: 105, 1914, cited by Rice, F. E., Arch. Pediat. **44**: 758 (Dec.) 1927.
27. Chambers, L. A.: Soft Curd Character Induced in Milk by Intense Sonic Vibration, J. Dairy Sc. **19**: 29 (Jan.) 1936.
28. Theophilus, D. R.; Hansen, H. C., and Spencer, M. B.: Influence of Homogenization on the Curd Tension of Milk, J. Dairy Sc. **17**: 519 (July) 1934.
29. Caulfield, W. J., and Martin, W. H.: The Influence of Homogenization on the Soft-Curd Character of Milk, Milk Plant Monthly **23**: 24 (Dec.) 1934.
30. Lyman, J. F.; Browne, E. H., and Otting, H. E.: Readjustment of Salts in Milk by Base Exchange Treatment, Indust. Engin. & Chem. **25**: 1297 (Nov.) 1933.
31. Hess, J. H.; Poncher, H. G., and Woodward, Helen: Factors Influencing the Utilization of Calcium and Phosphorus of Cow's Milk, Am. J. Dis. Child. **48**: 1058 (Nov.) 1934.
32. Brennemann, Joseph: The Coagulation of Cow's Milk in the Human Stomach, Arch. Pediat. **34**: 81 (Feb.) 1917.
33. Brennemann, Joseph: The Artificial Feeding of Infants, in Pediatrics, I. A. Abt, editor, Philadelphia, W. B. Saunders Company, 1923, vol. 2.
34. Palmer, L. S., and Richardson, G. A.: The Colloid Chemistry of Rennet Coagulation, in Colloid Symposium Monograph, Third National Symposium on Colloid Chemistry, H. N. Holmes, editor, New York, Chemical Catalog Company, 1925.

quantity of prothrombin. The authors present additional arguments to support their views by showing that no other substance necessary for coagulation is deficient in jaundiced blood. Fibrinogen and serum calcium may be decreased in some instances, but fatal hemorrhage may occur even with normal levels of either substance. Thromboplastin, a cephaloprotein compound, is not lacking, as the studies of Quick, Stanley-Brown and Bancroft show, and certainly the thrombocytes from which it is derived are ordinarily present in normal numbers in jaundiced blood.

The correctness of the idea that deficiency of prothrombin is a cause of bleeding in hepatic disease is strongly supported by the recent observations of Hawkins and Brinkhous,[3] who have shown that the hemorrhagic tendency in the presence of bile fistula of dogs is attributable to a low level of prothrombin in the plasma, a condition which may be corrected by feeding bile. They point out that normal blood contains a large excess of prothrombin, while only a small amount is necessary to normal clot formation, which may explain the temporary beneficial effect of blood transfusion.

There are other recent studies on prothrombin deficiency which have a direct bearing. In animals fed sweet clover hay which has been improperly cured, a hemorrhagic condition attributable to prothrombin deficiency results;[4] a similar and probably a related condition can be produced in chicks by a diet deficient in the fat soluble vitamin K, and here again the prothrombin content of blood is reduced.[5] Both conditions are prevented or relieved by feeding alfalfa hay or other substances rich in vitamin K. The similarity of the two conditions suggests that this vitamin and prothrombin may be related in some way, and Dam and his co-workers[6] have strengthened this impression by demonstrating that prothrombin can be prepared from the plasma of normal chicks, while corresponding preparations from chicks lacking vitamin K are inactive.

As these investigators show, preparations of prothrombin contain vitamin K, a fact which is at variance with the observation that the vitamin does not act as prothrombin in vitro. No matter what the actual interpretations may be, it is apparent that both a toxic factor and a form of avitaminosis may have a similar effect on the prothrombin level of blood, and as Quick[5] has noted, the latter condition may obtain in obstructive jaundice. The curative effects of feeding alfalfa may depend on the presence of vitamin K or on some accessory substance necessary for formation of prothrombin. An adaptation of these studies to an investigation of the hemorrhagic state in jaundice may conceivably lead to new light on an old and baffling problem.

3. Hawkins, W. B., and Brinkhous, K. M.: Prothrombin Deficiency the Cause of Bleeding in Bile Fistula Dogs, J. Exper. Med. **63**: 795 (June) 1936.
4. Roderick, L. M.: A Problem in the Coagulation of the Blood: "Sweet Clover Disease of Cattle," Am. J. Physiol. **98**: 413 (Feb.) 1931.
5. Quick, A. J.: The Coagulation Defect in Sweet Clover Disease and in the Hemorrhagic Chick Disease of Dietary Origin: A Consideration of the Source of Prothrombin, Am. J. Physiol. **118**: 260 (Feb.) 1937.
6. Dam, Henrik; Schønheyder, Fritz, and Tage-Hansen, Erik: Studies on the Mode of Action of Vitamin K, Biochem. J. **30**: 1075 (June) 1936.

ALLERGIC TISSUE CULTURES

The application of tissue culture methods has led to but few conclusions of greater clinical interest than the recent demonstration of the altered growth vigor of fixed tissue cells as a result of somatic sensitization to certain bacterial products. The first studies of the in vitro effects of specific bacterial antigens on tissue cultures were made about ten years ago by Rich and Lewis[1] of Johns Hopkins University. These investigators found that the addition of human type tuberculins to explants from the spleen of tuberculous guinea-pigs inhibited the growth and caused degeneration in these explants. The same tuberculins had no demonstrable toxic effects on explants from nontuberculous guinea-pigs.

This observation was adequately confirmed about four years later by Aronson[2] of the Phipps Institute at the University of Pennsylvania, who studied the allergic toxicity of tuberculins of avian, bovine and human type on explants from bone marrow, spleen and testes of both guinea-pigs and fowls. All these tuberculins were found to be toxic for explants from animals with homologous tuberculous infections. All were nontoxic on control explants from normal animals. Aronson was surprised to find that "tuberculin" from the so-called leprosy bacillus was toxic also for splenic explants from tuberculous fowls. Other acid-fast bacilli invariably yielded nontoxic "tuberculins."

The cellular nature of this tuberculous allergy, however, was not established by these earlier tests, since the explants were presumably saturated with humoral antibodies. Moen and Swift[3] of the Rockefeller Institute, therefore, not only tested first generation explants from normal and tuberculous animals but made similar tests on second, third and later generation transplants from these tissue cultures. They report that tuberculin-sensitive tissues grown in normal culture mediums showed sensitivity to tuberculin through several transplantations, during which time many new generations of cells had developed. Of even greater clinical significance was their collateral observation that "the degree of cellular sensitivity to tuberculin does not parallel the acuity of the infective process . . . but represents a more or less permanent acquired characteristic impressed on the cell as a result of the infection."

Moen[4] has recently extended his tissue culture studies to other bacterial antigens. He found that tissues isolated from guinea-pigs infected with group C hemolytic streptococci, for example, showed an acquired hypersusceptibility to extracts from hemolytic streptococci. This hypersusceptibility was shown by cellular degenerations and by inhibition of normal cellular growth and migration. Here also he found no correla-

1. Rich, A. R., and Lewis, Margaret R.: Proc. Soc. Exper. Biol. & Med. **25**: 596 (April) 1928.
2. Aronson, J. D.: J. Exper. Med. **54**: 387 (Sept.) 1931.
3. Moen, J. K., and Swift, H. F.: J. Exper. Med. **64**: 339 (Sept.) 1936.
4. Moen, J. K.: J. Exper. Med. **64**: 355 (Sept.) 1936.

V 10
1937

tion between the degrees of sensitivity of splenic cells and the skin reactivity of intact animals. Neither the in vitro splenic allergy nor the independent cutaneous hypersensitivity is correlated with the specific antibody titer of the blood serum. The cellular sensitivity in streptococcic infections, however, is less permanent in character than the control tuberculin sensitivity. Second and third generation transplants are demonstrably less hypersensitive than the first generation explant.

Moen's results are in accord with the growing opinion that bacterial anaphylaxis is a harmful rather than a defensive tissue mechanism. Cells from infected animals display an increased vulnerability to the toxicity effects of homologous bacterial production. Moen emphasizes the fact, however, that this conclusion is not applicable to nonbacterial antigens. Tissue cultures from animals sensitized to horse serum, egg albumin or beef lens, for example, "are not specifically inhibited when the respective antigens are added to tissue cultures." A continuation of this promising line of investigation may in time give a new basis for the interpretation of many allergic and immune phenomena.

Current Comment

GIOVAN COSIMO BONOMO

On June 20 the two hundred and fiftieth anniversary of the discovery of the parasitic nature of scabies by Bonomo will be celebrated. This occasion has already received the attention of the American Association of the History of Medicine, which adopted and forwarded a resolution to the Italian Society of Dermatology and Syphilology and the Italian Society of the History of Medicine and Natural Sciences for their joint commemoration of "Scabies Day." According to Friedman, "it was not until 250 years ago that for the first time in history the etiology of any one of the diseases known to man was discovered."[1] That disease was scabies and, although the cause and effect were correctly assigned in 1687, it was not until 1834 that Bonomo's discovery was confirmed by Renucci, who demonstrated its true nature experimentally. Sharp-eyed peasant women, long familiar with the itch and its cutaneous habitat, had taught Bonomo just where to find the parasite and how to remove it. With clinical acumen Bonomo and his associate studied their patients. With the microscope they studied the organism and its habits. Bonomo, however, was guilty of at least two errors: first in saying that the acarus has six feet, whereas it has eight, and secondly in stating that the parasite can almost always be found in the "watery pustules" or vesicles, whereas actually it is never found within them. Nevertheless the clinical and logical proof of the parasitic nature of scabies was beyond doubt, in spite of these errors and in spite of the failure to attempt proof by experimental inoculation.

1. Friedman, Reuben: Giovan Cosimo Bonomo, M. Life 44:3 (Jan.) 1937.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARIZONA

Society News.—Reuben L. Kahn, Sc.D., director of clinical laboratories, University Hospital, Ann Arbor, Mich., addressed the Pima County Medical Society, recently, on "The Basis of Allergy in Man."

Appointments to State Health Department.—Dr. Alvy N. Crain, Phoenix, formerly director of the Maricopa County health unit, has been appointed director of local health administration of the state department of health, succeeding Dr. George A. Hays; Dr. Jack B. Eason, Yuma, has been placed in charge of the bureau of maternal and child health. Dr. Crain graduated at the University of Louisville School of Medicine in 1913. Dr. Eason graduated at Jefferson Medical College, Philadelphia, in 1930.

ARKANSAS

Forty-Two Years a Secretary.—Dr. Thomas Douglass, Ozark, was guest of honor at a banquet, May 4, in celebration of his many years' service as secretary of the Franklin County Medical Society. Dr. Douglass, who is 69 years of age, has served continuously for forty-three years, with the exception of the year 1922 when Dr. Edward W. Blackburn, Ozark, held the office.

Pediatricians Elect Officers.—Dr. Edwin C. McMullen, Pine Bluff, was elected president of the Arkansas State Pediatric Association at its annual meeting in Little Rock, April 12. Dr. Garland D. Murphy, El Dorado, was chosen vice president and Dr. Madeline A. M. Melson, Little Rock, was reelected secretary. The speakers at the session included Dr. Frank Thomas Mitchell, Memphis, Tenn., on "Diarrhea and the Present Status of Treatment."

Society News.—At a meeting of the Benton County Medical Society in Bentonville, April 8, the speakers, among others, were Drs. Joseph L. Johnston on "Treatment of Hay Fever" and Fred R. Farthing, Springfield, Mo., "Modern Treatment of Sterility."——A symposium on the recent advances in therapy was presented before the Sebastian County Medical Society April 20 by Drs. Arless A. Blair, Thomas P. Foltz and Frederick H. Krock. The program included a discussion of protamine insulin, hypertonic sucrose solution and prontosil. All the speakers are from Fort Smith.

COLORADO

Three Deaths from Botulism.—Three women died of botulism in Trinidad, April 24, according to the bulletin of the state board of health. One of the women served beans, canned by a member of the family, at noonday April 21 and next day the three victims complained of the same symptoms: headache, dizziness, ocular disturbances and weakness. They were admitted to the hospital, April 23, all having difficulty in breathing, swallowing and speaking. One died early Saturday morning, one in the afternoon and the third at 11 p. m. A 250 Gm. guinea-pig that had been injected with 2 cc. of juice from the same jar from which the beans were taken died in about five hours with typical symptoms of botulism.

CONNECTICUT

"Brilliant Health Leader" Fined.—"Dr. Howard V. H. Inches, Dynamic and Brilliant Health Leader of America and England," was recently fined $25 and costs, following his plea of guilty to a violation of the itinerant vender law, according to the *New England Journal of Medicine*. Inches had begun a course on nutrition which, preceded by three free lectures, carried an entrance fee of $10 per person. Forty-eight persons are said to have joined the class and each one received a seventy-eight page booklet on nutrition. On investigation no record was found of the organization said to be sponsoring "Dr." Inches. Columbia University reported that Inches had listened to a few lectures during one term and that he did not matriculate for credit, had passed no examination and was not qualified as an authority on nutrition. He offered for sale Orzone Powder and Orzoil. The price of each was $1 and each was indispensable to the other. When Inches was arrested,

several diplomas were seized which were ready for presentation to the class on the completion of the course. The diploma was issued in the name of the American Dietetic Research Foundation, it was stated. Another diploma found in Inches' possession acknowledged him to be a graduate of the British College of Osteopathy. Subsequent investigation disclosed that this diploma had been issued Aug. 10, 1936, whereas the college was not registered as a business until September 2. One of Inches' companions was fined $10 and costs.

FLORIDA

State Society Appoints Business Manager.—Stewart G. Thompson, Dr.P.H., has resigned as director of the bureau of vital statistics of the state board of health, Jacksonville, to become business manager of the Florida Medical Association on a full time basis, it is reported. Dr. Thompson has devoted part time to the position for many years.

Annual Short Course for Practitioners.—The fifth annual short course for physicians in Florida will be held at the Orange Court Hotel, Orlando, June 21-26, under the auspices of the state medical association and the University of Florida. The evening sessions will be devoted to symposiums on tuberculosis and neurosurgery. Speakers in the former will include Drs. Pol N. Coryllos, New York; Rollin D. Thompson, Orlando, and Thomas M. Palmer, Jacksonville, while the speakers in the second will include Drs. Claude C. Coleman, Richmond, Va., and James G. Lyerly, Jacksonville. Other participants in the course will include:

Dr. Walter L. Bierring, Des Moines, health commissioner of Iowa, Medicine.
Dr. Jesse O. Arnold, professor of obstetrics, Temple University School of Medicine, Philadelphia, Obstetrics.
Dr. Alexander J. Schaffer, department of pediatrics, Johns Hopkins University School of Medicine, Baltimore, Pediatrics.
Dr. Bayard Carter, professor of obstetrics and gynecology, Duke University School of Medicine, Durham, N. C., Gynecology.
Dr. Ralph N. Greene, Coral Gables, medical director, Eastern Air Lines, Neuropsychiatry.
Dr. Wilbur E. Burnett, assistant professor of surgery at Temple, Surgery.

IDAHO

Annual Registration Due July 1.—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1 with the Department of Law Enforcement and at that time to pay a fee of $2. If a licentiate has not paid the annual registration fee by October 1, his license can be cancelled but will be restored within five years thereafter on payment of the delinquent fees and a $10 penalty. If a license has been cancelled for more than five years, it can be reinstated only on the payment of $25 and on the licentiate's passing an examination, the nature of which shall be determined by the Department of Law Enforcement.

ILLINOIS

State Tuberculosis Meeting.—The Illinois Tuberculosis Association held its annual meeting in Rockford, April 20, at the Nelson Hotel, with Dr. Henry R. Searle, Rockford, president, Winnebago County Tuberculosis Association, presiding. The speakers included:

Dr. Norman C. Bullock, commissioner of health of Rockford, Responsibility of Sanatorium Boards for Promoting Early Diagnosis of Tuberculosis.
Dr. Robinson Bosworth, Rockford, president, Illinois Tuberculosis Association, Tuberculosis in Apparently Healthy Individuals.

The afternoon program was devoted to the annual meeting of the Winnebago County Tuberculosis Association; guest speakers were:

Dr. Allan J. Hruby, Chicago, The Problems of Case Finding Among High School Students.
Dr. Jay Arthur Myers, Minneapolis, The Problem of Tuberculosis and Case Finding Among College Students.

Dr. Myers also addressed the annual meeting of the Winnebago County Tuberculosis Association early in the afternoon. Dr. Bosworth presented his presidential address after the banquet in the evening and Dr. James Burns Amberson Jr., New York, discussed "The Menace of Tuberculosis in Young People." All officers were reelected.

Chicago

Society News.—The Chicago Society of Internal Medicine was addressed, May 24, by Drs. Leroy H. Sloan and David Slight on "Syphilis: A Comparison of Wassermann and Kahn Reactions in a Series of 500 Positive Patients" and "Migraine" respectively. Dr. Walter Lincoln Palmer delivered the presidential address on "Graduate Education in Clinical Medicine."——Dr. Philip S. Hench, Rochester, Minn., discussed "Some Axiomatic Generalizations Useful in the Differential Diagnosis of Joint Diseases" before the Chicago Club for the Study of Arthritis, May 12.——The Chicago Urological Society was addressed by Drs. Hymen J. Burstein, Decatur, on "Double Kidney with Y-Shaped Ureter and Ureteral Calculus in an Infant." A symposium on metastatic infections of the kidney was presented by Drs. Vincent J. O'Conor, Chicago, and Homer G. Hamer, Indianapolis, and case reports by Drs. Charles M. McKenna and Edward W. White.——Dr. Haven Emerson, New York, will address the Health Division of the Council of Social Agencies, June 15, on "The District Health Center—An Indispensable Instrument of the Civil Government of Large Cities."

IOWA

Personal.—Dr. Eugene L. Walsh, Hawkeye, has been appointed in charge of the Washington County Public Health Unit, succeeding Dr. Regnar M. Sorenson, Washington.——E. W. Neenan, D.D.S., Sioux City, has been appointed a member of the state conservation commission to succeed Dr. Everett E. Speaker, Lake View, who resigned.

Annual Clinic.—Mercy Hospital, Des Moines, held its third annual clinic June 2-3. The program included clinics, lectures and case presentations. At the annual banquet, the first evening, the speakers included Dr. Walter D. Abbott, president of the hospital staff, who presided; Joseph H. Allen, mayor of Des Moines, and Dr. Jacob Arnold Bargen, Rochester, Minn., who discussed "The Early Diagnosis of Intestinal Diseases."

State Medical Election.—Dr. Arthur W. Erskine, Cedar Rapids, was named president-elect of the Iowa State Medical Society at its annual meeting in Sioux City recently and Dr. Edward M. Myers, Boone, was inducted into the presidency. New vice presidents are Drs. Kenneth L. Johnston, Oskaloosa, and Archibald F. O'Donoghue, Sioux City; Drs. Robert L. Parker and Harold J. McCoy, Des Moines, are secretary and treasurer respectively. The next annual meeting will be at Des Moines May 11-13.

KENTUCKY

Personal.—Dr. Charles G. Baker, Louisville, has been appointed health officer of Fulton County to succeed Dr. Gradie R. Rowntree, Hickman, who has been appointed assistant health officer of Louisville, it is reported.——Dr. James C. Hancock, recently a member of the staff of the Indian Medical Service at Fort Apache, Ariz., has been made health officer of Hickman County.——Dr. Joseph J. Gerkins, Bedford, has been appointed health officer of Fleming County to succeed Dr. Chadwick W. Christine, who resigned to accept a similar position in Jefferson County. The change was effective April 30.

MAINE

State Medical Meeting at Belgrade Lake, June 20-22.—The eighty-fifth annual session of the Maine Medical Association will be held at the Belgrade Hotel, Belgrade Lake, June 20-22, under the presidency of Dr. Frederick T. Hill, Waterville. Conferences on miscellaneous topics will be held Monday and Tuesday mornings, at which the guest speakers will include Drs. Joseph H. Shortell and Augustus Thorndike Jr., both of Boston. Other speakers will include:

Dr. Frederick M. Law, New York, X-Ray of the Sinuses and Mastoids.
Dr. Jacob Schloss, Boston, Diagnosis and Follow Up of Chronic Inflammatory Lesions of the Stomach.
Dr. Frederick A. Coller, Ann Arbor, Mich., The Administration of Fluids to the Sick Surgical Patient.
Dr. William C. Quinby, Boston, The Operative Treatment of Urinary Stone.

There will be reunions of alumni of the medical schools of Boston, Johns Hopkins, Bowdoin, McGill and Harvard universities Monday; in the evening, a dinner meeting will be addressed by Dr. Rosco G. Leland, director, Bureau of Medical Economics, American Medical Association, Chicago, on medical economics. The annual banquet will be held Tuesday evening, when the presentation of fifty year service medals will be made. The speakers will be Governor Lewis Barrows; Franklin W. Johnson, LL.D., president, Colby College; Colonel Campbell, Sanford; Dr. Harris P. Mosher, Boston, and Kenneth G. Roberts.

MARYLAND

Dr. Harrop Joins Squibb and Sons.—Dr. George A. Harrop, associate professor of medicine, Johns Hopkins University School of Medicine, has been appointed director of research on the staff of E. R. Squibb and Sons, according to *Science*. A new research laboratory is in process of construction at New Brunswick, N. J., it was stated. Investigation along scientific lines will be carried on without necessary regard to its immediate practical outcome. It is also planned to undertake active clinical investigation with which to supple-

V 10
1937

ment and give orientation to the laboratory studies. Dr. Harrop graduated at Johns Hopkins in 1916. He was appointed associate professor of medicine at his alma mater in 1925 and was also in charge of the chemical laboratory and work in diseases of metabolism and endocrinology.

Annual Meeting and Election of Medical Faculty.—Dr. Frank B. Hines, Chestertown, was elected president of the Medical and Chirurgical Faculty of Maryland at its annual meeting in Baltimore, April 27-28. Other officers are Drs. Frank S. Lynn, Baltimore; Richard C. Dodson, Rising Sun, and Everard Briscoe, Prince Frederick, vice presidents, and Walter D. Wise and Joseph Albert Chatard, both of Baltimore, who were reelected secretary and treasurer respectively. The scientific session, under the presidency of Dr. Arthur M. Shipley, included a symposium on present day problems of the physician with Drs. Richard T. Shackelford, Arthur J. Lomas and Maurice C. Pincoffs as the speakers. At a round table luncheon, the following, among others, spoke:

Dr. Huntington Williams, Occupational Diseases and Industrial Hygiene.
Dr. William F. Rienhoff Jr., Surgical Treatment of Nontuberculous Lesions of the Lungs and Mediastinum.
Dr. John Mason Hundley Jr., Inflammatory Malignant Diseases of the Cervix, Vaginitis Due to the Trichomonas and the Gonococcus, Cystitis and Urethritis.
Dr. Robert P. Bay, Industrial Surgery, Estimation of Permanent Partial Disability.

Dr. Eldridge L. Eliason, professor of clinical surgery, University of Pennsylvania School of Medicine, Philadelphia, delivered the annual Trimble lecture on "The Surgeon's Rôle in the Right Upper Quadrant," and Dr. Russell M. Wilder, Rochester, Minn., addressed the general meeting on "Clinical Investigations of Insulins with Prolonged Action."

MASSACHUSETTS

Personal.—Dr. Richard J. Neil has been appointed school physician of Methuen, succeeding Dr. Roy V. Baketel, who held the position thirty years.——Otto Krayer, professor of pharmacology, American University of Beirut, Syria, has been appointed associate professor of pharmacology at the Harvard University Medical School for five years beginning next September.

Conference on Health Education.—The twelfth annual conference of the New England Health Education Association was held at the Massachusetts Institute of Technology, Cambridge, June 4-5. Speakers included:

Lura Oak, Ph.D., Cambridge, Massachusetts Department of Public Health, Reading Disability and Its Relation to Social Maladjustment.
Julia Ernestine Becker, A.M., associate in biochemistry, Johns Hopkins University School of Hygiene and Public Health, Baltimore, Recent Progress in Nutrition: Its Significance.
Dr. Rolf Lium, Boston, extension secretary, Massachusetts Society for Social Hygiene, Social Hygiene in Health Education.
C. E. Turner, Dr.P.H., Cambridge, New Findings Concerning Intermittency in Growth.
Dr. Henry B. Elkind, Boston, medical director, Massachusetts Society for Mental Hygiene, Mental Hygiene in Education.

Society News.—Dr. George G. Smith, Boston, was elected president of the Massachusetts Society for Social Hygiene at its annual meeting in Boston, April 13.——Dr. Martha Brünner-Ornstein, Vienna, Austria, addressed the New England Physical Therapy Society, April 21, on "Recent Advances in Physical Therapy," and Dr. Afley Leonel Brett, Boston, "Low Back Strain."——A symposium on schizophrenia was presented before the Boston Society of Psychiatry and Neurology, April 15, by Dr. Louis H. Cohen, Hudson Hoagland, Ph.D., and Dr. Roy G. Hoskins.——Among others, Drs. Karl Jefferson Thomson and Mandel E. Cohen discussed "Changes in the Electrocardiograms and in the Contour of the Heart in Normal Pregnant Women" before the New England Heart Association, Boston, April 12.

MICHIGAN

Medical School to Publish a Journal.—The *Journal of the Wayne University College of Medicine* will make its appearance in June and will hereafter be published quarterly. The entire business and editorial staff is composed of members of the junior and senior classes of the medical college, while a faculty alumni board will serve in an advisory capacity. This is the first time the publication of a bulletin has been attempted by the students.

Medical Supplement in Detroit Free Press.—The Wayne County Medical Society is preparing a medical supplement, which will appear in the Detroit *Free Press*, June 20. Special committees have been appointed to prepare outlines of progress during the past twenty years in various medical specialties. The supplement will also include a diagram of the administrative set up, and feature articles on the history and activities of the society. There will also be stories on the woman's auxiliary, the medical school and the board of health.

Personal.—Dr. Frederick G. Novy, Ann Arbor, was made an honorary member of the Wayne County Medical Society May 17.—— Dr. Ragnar T. Westman, Bay City, has been appointed director of the recently organized Bay County Health Department. With his appointment, it was stated that the organization of the thirty-two county and district health departments in this state has been completed, serving 54 per cent of the rural population and 10.7 of the urban population.—— Alfred F. Way has been appointed superintendent of Bronson Hospital, Kalamazoo.——Dr. Francis De Salvo has been named health officer of Niagara for two years.

MINNESOTA

University News.—Dr. Robert S. Stone, San Francisco, gave the annual address in the University of Minnesota Cancer Institute Lectureship, May 4, on "Theoretical and Practical Considerations of Supervoltage X-Rays, Neutrons and Artificial Radioactive Substances for Treatment of Cancer."

Radiologic Society Election.—Dr. Walter H. Ude, Minneapolis, was chosen president of the Minnesota Radiological Society at its recent annual meeting in St. Paul; Dr. Leo G. Rigler, Minneapolis, vice president, and Dr. Harry M. Weber, Rochester, secretary-treasurer.

New Health Officer of Rochester.—Dr. Thomas B. Magath, associate professor of pathology, bacteriology and immunology, Graduate School of Medicine, University of Minnesota, has been appointed health officer of Rochester, succeeding Dr. Charles H. Mayo, who held the position for twenty-five years.

Dr. Edgar Brown Reaches Retirement Age at Minnesota.—Dr. Edgar D. Brown, associate professor of pharmacology at the University of Minnesota School of Medicine, recently reached the retirement age. In 1902 Dr. Brown graduated from Western Reserve University School of Medicine, Cleveland, where he served from 1903 to 1906 as a member of the faculty. Since that time he has been associated with the University of Minnesota.

Ordinance Requires Ambulances to Carry Splints.—An ordinance was approved by the mayor of Crookston, April 16, requiring all ambulances to be equipped with first aid and splint appliances, to be sanctioned by the board of health, and requiring an attendant with a certificate of fitness. Passed through the efforts of Dr. Arthur Kahala, the ordinance applies to any ambulance or other vehicle, used for the transportation or conveyance of the sick or injured. The fracture committee of the state medical association and the regional committee of the American College of Surgeons are endeavoring to have similar ordinances passed in every city and town throughout the state in which ambulances are operated, to provide for proper splinting of fractures before the patients are transported to hospitals.

MISSOURI

Personal.—Dr. Richard Weissenberg, for many years a member of the medical faculty of the University of Berlin, has been appointed visiting professor of cytology at Washington University School of Medicine, St. Louis.

State Medical Election.—Dr. Bernard W. Hays, Jackson, was chosen president-elect of the Missouri State Medical Association at its annual meeting in Cape Girardeau, May 12, and Dr. Dudley S. Conley, Columbia, was installed as president. Dr. Edward J. Goodwin, St. Louis, continues as secretary. The next annual session will be held in Jefferson City.

Society News.—A Missouri chapter of the National Society for the Advancement of Gastro-Enterology has been formed in St. Louis with forty-one charter members. Dr. Horace W. Soper is president, Dr. Frank D. Gorham vice president, Dr. Charles W. Duden secretary and Dr. Lee Pettit Gay treasurer.——Dr. Oliver S. Gilliland has been elected president of the Kansas City Eye, Ear, Nose and Throat Society, succeeding Dr. William Byron Black.——The St. Louis County Medical Society was addressed, April 14, by Drs. Oscar P. Hampton Jr. on "Modern Treatment of Fractures of the Hip" and Clinton W. Lane, "Diagnosis and Treatment of Ringworm Infection of the Hands and Feet."——Drs. Joseph W. Gale, Madison, Wis., and Morris B. Simpson, Kansas City, were among the speakers before the Jackson County Medical Society, May 25; their subjects were "Advantages of Surgery in the Treatment of Pulmonary Tuberculosis" and "Feeding Problems in Laryngeal Tuberculosis" respectively.

NEBRASKA

District Meetings.—The spring meeting of the Third Councilor District was held at Humboldt, April 15, with addresses by the following members of the faculty of Creighton University College of Medicine, Omaha: Drs. John R. Kleyla, on "Recent Advances in the Treatment of Pneumonia"; Ralph H. Luikart, "Care of the Cervix in the Prevention of Cancer of the Uterus," and Earl A. Connolly, "Treatment of Leg Ulcers and Varicose Veins."——Drs. Abram E. Bennett and Richard H. Young, Omaha, addressed the Sixth Councilor District Medical Society at Wahoo, April 28, on "Recognition and Treatment of the Common Neuroses" and "Recognition, Management and Treatment of the Psychoses" respectively.

NEW HAMPSHIRE

Personal.—Dr. John F. Gile, Hanover, has been appointed a life trustee of Dartmouth College. Dr. Gile is the son of Dr. John M. Gile, 1887, who was also a Dartmouth trustee.

State Medical Election.—Dr. Clarence O. Coburn, Manchester, was chosen president-elect of the New Hampshire Medical Society at its annual meeting in Manchester, May 17, and Dr. Samuel T. Ladd, Portsmouth, was installed as president. Dr. Carleton R. Metcalf, Concord, was reelected secretary.

NEW JERSEY

Fifty Years of Practice.—Drs. Henry B. Diverty, Woodbury, and Eugene Z. Hillegass, Mantua, were honored with a surprise dinner in Woodbury, April 16, given by the Gloucester County Medical Society to celebrate their completion of fifty years in the practice of medicine. Both physicians are past presidents and the two oldest members of the society, it is reported.

Society News.—Dr. Irving Sherwood Wright, New York, addressed the Middlesex County Medical Society, Metuchen, recently, on "The Present Status of Treatment of Peripheral Vascular Diseases." Dr. Paul Reznikoff, New York, addressed the society recently on "Hematological Problems in the Practice of Medicine."—Dr. Temple S. Fay, Philadelphia, addressed the Gloucester County Medical Society, Woodbury, recently, on "Mechanism of Headache; Its Diagnosis and Treatment."——Dr. Charles Gordon Heyd, New York, President of the American Medical Association, addressed the Hudson County Medical Society, Jersey City, recently, on "Classification and Treatment of Goiter."—Dr. Frank W. Konzelmann, Philadelphia, addressed the Essex County Anatomical and Pathological Society in Newark recently on "Clinical Pathology in Bright's Disease." Dr. Arthur M. Fishberg, New York, discussed the paper.——Dr. George J. Heuer, New York, addressed the Bergen County Medical Society, Hackensack, April 13, on "Errors in the Diagnosis and Treatment of Acute Abdominal Conditions."

NEW MEXICO

Personal.—Dr. Harrison Eilers, Los Lunas, has been appointed health officer of the eighth district, with headquarters at Los Lunas. He succeeds Dr. Julian O. Long, who went to the third district in Albuquerque.

State Medical Election.—Dr. Eugene W. Fiske, Santa Fe, was chosen president-elect of the New Mexico Medical Society at its annual meeting in Clovis, May 14, and Dr. George W. Jones, Clovis, was inducted into the presidency. Dr. George T. Colvard, Deming, was elected vice president and Dr. Leo B. Cohenour, Albuquerque, was reelected secretary.

NEW YORK

Changes in Faculty at Albany.—Dr. John A. Sampson will relinquish the chairmanship of the department of gynecology and obstetrics at Albany Medical College, July 1, having reached the retirement age, according to the New York *Times*. He will continue his association with the school as Alden March professor of gynecology. Dr. Arthur W. Elting, professor of surgery for twenty-six years, will also retire, July 1, on account of having reached the age limit.

New Typhoid Carriers.—Forty-five new typhoid carriers were declared in 1936, giving a total of 383 carriers in the state, according to a report of the state department of health. Of the twenty-four carriers whose names were removed from the register during the year, eleven died; three were released from restrictions after submission of the required number of negative specimens following cholecystectomy, while the names of ten were removed because of change of residence of the carrier to a community outside the jurisdiction of the department. Eighteen of the newly registered carriers were discovered through epidemiologic investigation of outbreaks and twenty-one through the requirement of release cultures from cases of typhoid. Only one large outbreak was traced to a carrier in 1936. This carrier had not previously been detected but was believed to have caused seven cases in an unsolved outbreak in 1932 and nine cases during the outbreak in 1936. Only ten cases of typhoid were traced to previously known carriers; of this number four were unimmunized household contacts of carriers.

New York City

Gifts to Columbia.—Gifts to Columbia University for medical research recently include the following:

John P. Pierce Foundation, $35,800 for research in bacteriology.
W. K. Kellogg Foundation, $10,000 for the study of rheumatic fever.
Rockefeller Foundation, $3,500 for research on constitutional aspects of disease, under the direction of Dr. George Draper; $4,000 for further study of "visual purple," vitamin A and vision under direction of Prof. Selig Hecht, and $1,500 for research in nutritional encephalomalacia and muscular dystrophy, under direction of Hans T. Clarke.
Smith, Kline and French Laboratories, $2,800 for research in pharmacology under Dr. Charles C. Lieb.
Chemical Foundation, $2,500 for research on brain chemistry, under direction of Dr. Frederick Tilney.
The Anna Fuller Fund, $1,500 for tissue culture work at the Institute of Cancer Research.
William J. Matheson Foundation, $1,125 to be added to the Matheson Encephalitis Fund.

Society News.—Drs. Edward N. Packard, Saranac Lake, and Pol N. Coryllos addressed the Medical Society of the County of Kings, April 20, on medical and surgical aspects, respectively, of intrathoracic suppuration.——Dr. Jefferson C. Pennington, Nashville, Tenn., addressed the genito-urinary section of the New York Academy of Medicine recently on "Conservative Management of Damaged Renal Tissue."——Drs. Percy S. Pelouze and David Melvin Davis, Philadelphia, addressed the Medical Society of the County of Queens, recently, on "Prevention and Treatment of Venereal Disease" and "The Surgical Aspect of Venereal Disease" respectively.——A program on heart disease arranged by the Bronx Pathological Society was presented before the Bronx County Medical Society, April 21, by Drs. Louis R. Ferraro, William Aronson and Joseph C. Ehrlich.

Mr. Van Cleve is Dead.—Edward M. Van Cleve, principal emeritus of the New York Institute for the Education of the Blind, died at his home, May 21, aged 70. Mr. Van Cleve had assisted in the formation in 1915 of the National Society for the Prevention of Blindness, sponsored by the Russell Sage Foundation, and became its first managing director, a position he held for nine years. At one time he was president of the Ohio State Commission for the Blind and in 1907 was superintendent of the Ohio State School for the blind. In 1931 Mr. Van Cleve was awarded the Leslie Dana Gold Medal by the National Society for the Prevention of Blindness in cooperation with the St. Louis Society for the Blind, through which the medal is offered by Leslie Dana, St. Louis, for "outstanding achievements in the prevention of blindness and the conservation of vision."

NORTH CAROLINA

Extension Course in Sixteen Counties.—A series of lectures for physicians was presented during March and April in sixteen counties under the auspices of the University of North Carolina School of Medicine and the extension division of the university. The speakers included Drs. Stewart R. Roberts, Atlanta; Thomas Grier Miller, Philadelphia; Howard Fox, New York; James R. McCord, Atlanta; Christian P. Segard, Leonia, N. J.; George P. Müller, Philadelphia, and Charles F. McKhann, Boston. The counties in which the course was given are Wake, Franklin, Warren, Granville, Johnston, Edgecombe, Nash, Wilson, Cumberland, Person, Chatham, Vance, Hartnett, Lee, Wayne and Orange.

All Servants to Be Examined for Syphilis.—All domestic servants in North Carolina are required to have an examination at least once a year, or as often as the employer desires, to determine the presence of syphilis or tuberculosis, in accordance with a law recently enacted in the state. Domestic servants presenting themselves for employment must, under the law, furnish the employer with a certificate from a practicing physician or the public health officer of the county in which they reside, certifying that they have been examined within two weeks prior to the time of presentation of the certificate, that they are free from all contagious, infectious or communicable diseases, and showing the nonexistence of any venereal disease that might be transmitted. The original report showing the tests to be negative from a laboratory approved by the state board of health for making Wassermann and other tests must accompany the certificate.

V 10
1937

NORTH DAKOTA

State Medical Election.—Dr. William H. Long, Fargo, was chosen president-elect of the North Dakota State Medical Association at its annual meeting in Grand Forks, May 18, and Dr. Edwin L. Goss, Carrington, was installed as president. Vice presidents are Drs. Harry A. Brandes, Bismarck, and Cyril J. Glaspel, Grafton. Dr. Albert W. Skelsey, Fargo, was reelected secretary, and Dr. William W. Wood, Jamestown, treasurer. The next annual meeting will be held in Bismarck. A tribute was paid to the first president of the society, Dr. Joseph G. Millspaugh, as a feature of its fiftieth anniversary, when excerpts from the first annual report were read by his daughter, Mrs. A. W. Ide, St. Paul. Another notable feature of the annual session this year was the special ceremony held in honor of fourteen members of the society who were licensed to practice in Dakota Territory before North Dakota became a state in 1889. Dr. James Grassick, Grand Forks, the only member known to have attended the organization meeting, presided. The fourteen members are Drs. James P. Aylen, Grafton; Frederick N. Burrows, Bathgate; Andrew Carr, Minot; Edward I. Donovan, Langdon; Amos A. Flaten, Edinburg; Charles B. Harris, Pembina; Arthur T. Horsman, Devils Lake; George McIntyre, Long Beach, Calif.; Charles MacLachlan, San Haven; Henry O'Keefe, Grand Forks; Thomas C. Patterson, Lisbon; William H. Welch, Larimore, and Drs. Grassick and Glaspel.

OHIO

Pharmaceutical Company in New Quarters.—The William S. Merrell Company, Cincinnati, has moved into a newly constructed laboratory, factory and office building which is located just outside the city limits of Cincinnati, near the village of Reading. The buildings are thoroughly modern and there is additional land to provide for future expansion. The company was founded in 1828.

Society News.—At a meeting of the Academy of Medicine of Cleveland, May 21, Dr. Alfred W. Adson, Rochester, Minn., discussed "The Relief of Intractable Pain." The academy presented a "medical musical medley" May 6.——Dr. Linn J. Boyd, New York, lectured at Huron Road Hospital, East Cleveland, June 9, on "Newer Studies in Shock."——Dr. John Alexander, Ann Arbor, Mich., among others, addressed the Clinical Society of the University Hospitals, Cleveland, May 20, on "Pulmonary Abscess and Bronchiectasis."

Rehabilitation After the Flood.—Five members of the U. S. Public Health Service, cooperating with the Ohio State Department of Health, have been stationed in the flooded counties of the state, to assist local health officials in the rehabilitation program now under way. The project includes the restoration of public and private water supplies, the protection of milk and food supplies, disposal of sewage on both public and private property, and disposal of dead animals. According to the state department of health, about 100,000 inoculations against typhoid were administered by the department alone, not counting those given by local physicians, a complete record of which is not yet available. There were 10,000 private wells and cisterns chlorinated. According to *Ohio Health News*, April 1, only three cases of typhoid had been reported up to that time and, in Portsmouth, fewer deaths and more births had been reported during the flood period than in other years during the same period.

OREGON

Plague-Infected Ground Squirrels.—According to *Public Health Reports*, a lot of fifty-six fleas taken from Oregon ground squirrels, shot 14 miles north of Lakeview, in Lake County, were found to be plague infected, May 7.

PENNSYLVANIA

Dr. Buyers Honored.—Dr. Edgar S. Buyers, Norristown, was honored by the Montgomery County Medical Society, April 23, when he concluded twenty years as secretary of the society to become its president. He was presented with a gold watch and chain. Dr. Buyers took office in 1917 and it is reported that he was absent only once and that when he was on official business for the society. He is chairman of the board of trustees of the Medical Society of the State of Pennsylvania and was formerly councilor for the second district.

Philadelphia

Society News.—Dr. Walter Estell Lee, among others, addressed the Philadelphia Pediatric Society, May 11, on "Treatment of Burns with Special Reference to Use of Tannic Acid and Silver Nitrate."——Dr. George Packer Berry, Rochester, N. Y., was the guest speaker before the Pathological Society of Philadelphia, May 13; he discussed "Observations on the Transformation of the Virus of Rabbit Fibroma (Shope) into That of Infectious Myxomatosis (Sanarelli)."

Dr. Krusen Honored.—Dr. Wilmer Krusen, president of the Philadelphia College of Pharmacy and Science since 1927, and formerly president of the Philadelphia County Medical Society, was guest of honor at a dinner, May 26, given by friends and colleagues to celebrate his sixty-eighth birthday. Dr. Krusen was born in Richboro, Pa., May 18, 1869, graduating at Jefferson Medical College in 1896. Beginning his career as a pharmacy clerk in 1886, he became professor of gynecology at Temple University School of Medicine in 1902. He subsequently served as director of public health of Philadelphia, as president of the Philadelphia Obstetrical Society, Philadelphia Clinical Society, the state health association and the Philadelphia Medical Club, and is a member of the committee on public relations of the state medical society.

TENNESSEE

Society News.—Dr. Franklin B. Bogart addressed the Hamilton County Medical Society, Chattanooga, April 22, on "Radiation Therapy in Pelvic Lesions," and Dr. William D. Anderson on "Endocrinology in Childhood."——At a meeting of the Hardin, Lawrence, Lewis, Perry and Wayne Counties Medical Society in Linden, recently, the speakers included Drs. Watt Yeiser, Columbia, on "Indications for and Demonstration of Practical Oxygen Therapy"; Frank E. Whitacre, Memphis, "Treatment of Eclampsia," and Charles M. Hamilton, Nashville, "Treatment of the Commoner Skin Diseases."——Dr. Walter M. Luttrell, Knoxville, addressed the Knox County Medical Society, April 6, on diabetes mellitus.——A symposium on thyroid disease was presented before the Memphis and Shelby County Medical Society, April 20, by Drs. William C. Chaney, Casa Collier, Walter W. Robinson and William R. Bethea.

VIRGINIA

Portrait of Dr. Long.—The section on the history of medicine of the Richmond Academy of Medicine, Richmond, presented a portrait of Dr. Crawford W. Long to the academy at a meeting, April 13. The presentation was made by Dr. Carrington Williams and the speech of acceptance by Dr. Marvin Pierce Rucker, president of the academy, both of whom discussed the historical aspect of anesthesia. Other speakers were Drs. Beverley R. Tucker, who reviewed the life and work of Charles Edward Brown-Sequard, and Hubert A. Royster, Raleigh, N. C., "The Adventurous Life of Edward Warren Bey."

WISCONSIN

Board Denies Recognition to Foreign Graduates.—Graduates of foreign medical schools, with the exception of graduates of Canadian schools, will not be recognized in the future by the Wisconsin State Board of Medical Examiners, in accordance with a resolution unanimously approved by the board recently. The action was taken because of the board's inability to determine the reputability of the foreign schools concerned, it was stated.

Personal.—Dr. Frank O. Brunckhorst has been appointed health officer of Neenah, succeeding Dr. Bryce K. Ozanne, resigned, effective May 1.——Dr. Lewis Rothman was honored at a reception, April 4, given by the civic clubs of Wittenberg, in recognition of his fifty years in the practice of medicine. He is a charter member of the Shawano County Medical Society.——Dr. Timothy L. Harrington, Milwaukee, a member of the staff of the Wisconsin Anti-Tuberculosis Association since 1919, has been appointed medical director of River Pines Sanatorium, Stevens Point, succeeding Dr. Harold M. Coon, who has been named superintendent of the state tuberculosis sanatorium at Statesan.

HAWAII

Lectures on Obstetrics and Pediatrics.—A series of lectures on obstetrics and pediatrics was given at various places in Hawaii recently under the auspices of the bureau of maternal and infant hygiene cooperating with the Hawaii Territorial Medical Association. The lecturers were Drs. Fred L. Adair, professor of obstetrics and gynecology, Medical Department, Division of Biological Sciences, University of Chicago, and Clifford G. Grulee, clinical professor of pediatrics, Rush Medical College, Chicago. The program included a public talk at Kahului and Lihue and a repetition of the lectures before the Kauai County Medical Society.

GENERAL

Study of Neoplastic Diseases.—The American Association for the Study of Neoplastic Diseases will hold its next meeting at Johns Hopkins Hospital, Baltimore, June 24-25. A demonstration of microscopic pathology will make up the program. Members wishing to present a case should send 100 micro sections of the material to Dr. Charles F. Geschickter at the hospital. The September meeting of the association will be held at the Mayflower Hotel, Washington, D. C., September 9-11.

New Publication on Tumor Therapy.—A new monthly journal, the *Review of Tumor Therapy*, has made its appearance. It presents practical information that will be usable in treating patients and the latest methods and procedures. It will also correlate the essentially related fields of surgery, radiology and pathology. The editorial committee is composed of Drs. Isaac A. Bigger, Richmond, Va.; Robert S. Cathcart, Charleston, S. C.; Charles F. Geschickter, Baltimore; Benjamin Gruskin, Philadelphia, and Kenneth M. Lynch, Charleston. The editorial and business address is P. O. box 508, Charleston, S. C.

Courses for Teachers of Sight-Saving Classes. — The National Society for the Prevention of Blindness announces that courses of training for teachers and supervisors of sight-saving classes will be offered at several colleges during the summer sessions. Elementary courses will be given at Western Reserve University, Cleveland, June 21 to July 30; Wayne University, Detroit, June 29 to August 6, and Teachers College, Columbia University, New York, July 12 to August 20. Courses for advanced students will be offered at Western Reserve University, June 28 to July 31, and Teachers College, Columbia, July 12 to August 20. Details may be obtained from the director of the course at each school.

Association for the Advancement of Science (Section N).—The one hundredth meeting of the American Association for the Advancement of Science will be held in Denver, June 21-26. In the section on medical sciences (N) the program Tuesday and Wednesday will include a symposium on diseases caused by acid-fast bacteria. A discussion of leprosy will make up the program Thursday, while Friday's session will open with a memorial address on the life of Dr. Henry Sewall. The presentation of papers on tuberculosis and diseases of the chest will conclude the session. Speakers at the various sessions will include:

Dr. Edward Jackson, Denver.
Dr. Florence R. Sabin, New York.
Mr. Perry Burgess, New York, president, American Leprosy Foundation.

New Book of Abstracts on Anesthesia.—The Journal Club of the Section on Anesthesia, Mayo Clinic, Rochester, Minn., has compiled a group of abstracts on anesthesia under the title "Anesthesia Abstracts Volume I." The work was supervised by Dr. John S. Lundy with the assistance of Dr. Richard M. Hewitt and the division of publications of the clinic. The first issue contains 207 abstracts from eighty-eight journals, the work of thirty-five abstracters, and, in order to avoid conflict, each abstract differs from abstracts appearing elsewhere. Priced at $2, the compilation may be purchased from the Burgess Publishing Company, 426 South Sixth Street, Minneapolis. Volume II is now in process of publication, but the appearance of subsequent issues will depend on the preparation of a sufficient number of abstracts to warrant it and the evidence that they are wanted. It was announced that the principal need is for English abstracts of foreign articles.

The Rocky Mountain Conference in Denver.—The first Rocky Mountain Medical Conference, sponsored by the state medical societies of Colorado, New Mexico, Utah and Wyoming, will be held in Denver, July 19-21. The object is to bring together practitioners of the Mountain states and adjoining Middle West and Southwest states to hear discussions of general interest but especially to discuss problems peculiar to the region: Rocky Mountain spotted fever, silicosis among quartz miners, and sanitary problems incident to the tourist influx. Speakers will include Drs. Thomas Parran, surgeon general, and Roscoe R. Spencer of the U. S. Public Health Service, Washington, D. C.; Walter C. Alvarez, Rochester, Minn.; Walter E. Dandy, Baltimore; Julius H. Hess, Herman L. Kretschmer and Walter L. Palmer, Chicago; Hayes E. Martin, New York; William B. Carrell, Dallas; Leo G. Rigler, Minneapolis; Charles C. Dennie, Kansas City, Mo.; Gabriel Tucker, Philadelphia; Sterling Bunnell, San Francisco; Andrew J. Browning, Portland, Ore., and Earl C. Sage, Omaha.

Trailer Camp Sanitation.—At the annual conference of State and Provincial Health Authorities of the United States and Canada with the U. S. Public Health Service at Washington in April the committee on interstate relations offered recommendations directed toward improvement of sanitation in trailer camps. It was first urged that state health departments make efforts to acquaint tourists with their obligations to the rest of a community by working with tourist and trailer organizations in disseminating information concerning precautions to be observed. Suitable regulations under general health laws and enactment of such general laws where they do not exist were recommended, but the committee advised against specific laws unless absolutely necessary. Finally it was suggested that a special committee on trailer sanitation be appointed to cooperate with tourists' organizations and trailer manufacturers with a view to the standardization of type, size and location of waste water and sewage outlets to facilitate the design of camp sewer systems.

Association of Genito-Urinary Surgeons. — The forty-ninth annual meeting of the American Association of Genito-Urinary Surgeons will be held at the Seigniory Club, P. Q., Canada, June 14-16. The following speakers are included on the program:

Drs. William F. Braasch, Rochester, Minn., and James W. Merricks Jr., Clinical and Radiologic Data with Congenital and Acquired Single Kidney.
Drs. David W. MacKenzie, Montreal, and Allan B. Hawthorne, The Ectopic Kidneys: Surgical Aspects in a Series of Ectopic Kidneys.
Drs. Alexander R. Stevens, New York, and William R. Delzell, Traumatic Rupture of the Bladder with Data on Twenty-Seven Cases.
Drs. Roger C. Graves, Boston, and Richard Dresser, Experiences with High Voltage Roentgen Therapy in the Treatment of Malignant Tumors of the Urinary Bladder.
Drs. Hugh Cabot and John M. Pace, Rochester, Minn., Methods of Selecting the Proper Operative Treatment for Cancer of the Bladder.
Dr. Hugh H. Young, Baltimore, Progress in Urology, Retrospective and Prophetic.
Drs. David W. MacKenzie, Montreal, and Magnus I. Seng, Montreal, Obliteration of the Ureter in a Congenital Kidney with Hydronephrosis.
Drs. Ira R. Sisk, Madison, and Otto E. Toenhart, Madison, Gluconic Acid as a Urinary Acidifying Agent.
Drs. Archie L. Dean Jr., New York, and Joseph H. Farrow, Erythroplasia of the Penis.

Society News.—Dr. Walter E. Garrey, Nashville, Tenn., was elected president of the American Physiological Society at its recent annual meeting, and Dr. Andrew C. Ivy, Chicago, reelected secretary. The next annual session will be held in Baltimore, probably in April.——At a meeting of the American Society for Clinical Investigation, May 3, Dr. John R. Paul, New Haven, Conn., was chosen president, and Dr. Joseph M. Hayman Jr., Cleveland, reelected secretary. The next annual meeting will be held in Atlantic City, N. J., May 2, 1938. ——Dr. Neil Dayton, Boston, was chosen president-elect of the American Association on Mental Deficiency at its annual meeting in Atlantic City, May 5-8, and Dr. Harry C. Storrs, Wassaic, N. Y., was installed as president. Dr. E. Arthur Whitney, Elwyn, Pa., was reelected secretary and Richmond was named for the place of the next annual meeting.——At the annual session of the American Society of Biological Chemists, April 23, Glenn E. Cullen, Ph.D., Cincinnati, was elected president; William C. Rose, Ph.D., Urbana, Ill., vice president, and Henry A. Mattill, Ph.D., Iowa City, was reelected secretary. The next annual meeting will be held in Baltimore.——Dr. Kenneth D. Blackfan, Boston, was chosen president of the American Pediatric Society, May 1, and Dr. Hugh McCulloch, St. Louis, reelected secretary. The next annual session will be in Bolton Landing, N. Y., June 9-11.—— Dr. George R. Minot, Boston, was chosen president of the Association of American Physicians at its annual meeting in Atlantic City, May 5; Dr. Eugene F. Du Bois, New York, vice president, and Dr. Hugh J. Morgan, Nashville, Tenn., was reelected secretary.

Changes in Status of Licensure.—The California State Board of Medical Examiners reports the following action taken at its meeting February 8-11:

Dr. Edward H. Anthony, Los Angeles, probation for three years without narcotic privileges.
Dr. Francis James Bold, Montebello, license restored, placed on probation for five years.
Dr. Samuel D. Burgeson Jr., Los Angeles, placed on probation for five years without narcotic privileges.
Dr. Merton E. Eastman, San Andreas, probation for three years.
Dr. Thomas Flint Jr., Redding, license revoked for narcotic addiction.
Dr. James Harvey Johnston, San Francisco, probation for five years without narcotic privileges.
Dr. John G. Lenz, Redondo Beach, license restored; placed on probation for five years.
Dr. Ramon Lopez, Brawley, license restored, placed on probation for five years without narcotic privileges.
Dr. Leroy J. Otis, Norwalk, placed on probation for five years without narcotic privileges.
Dr. Allen H. Peck, Ventura, placed on probation for five years without narcotic privileges.
Dr. Byron H. Pelton, Compton, license restored, probation for five years without narcotic privileges.
Dr. Leo Morton Schulman, Los Angeles, license revoked, for alleged narcotic dereliction.
Dr. Henry C. Wallace, Fresno, placed on probation for five years without narcotic privileges.

V 10
1937

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 15, 1937.

Extension of the Use of Cesarean Section

At a meeting of the North of England Obstetrical and Gynecological Society, Prof. A. M. Claye advocated a wider use of cesarean section, which a few years ago was almost limited to cases of contracted pelvis and of occasional cases of fibroids or ovarian tumors obstructing labor. The operation had a high mortality when done late in labor, because the uterus was already infected. The infection easily passed through the wound into the general peritoneal cavity. It was therefore considered that when intervention was necessary late in labor and forceps delivery was impossible owing either to small dilatation of the cervix or to excessive disproportion, craniotomy was the safer operation. But the introduction of the lower segment operation had altered this. It was definitely safer than craniotomy, except possibly in some cases in which forceps had failed. If the uterine wound became infected, the peritonitis was likely to be pelvic, with low mortality. The lower segment had the advantage over the classic section that the scar was situated in a quieter part of the uterine muscle, less liable to the stresses and strains of contraction and relaxation during the puerperium. A better scar formed with less danger of rupture in a subsequent pregnancy. Finally, there was less danger of the scar contracting dangerous adhesions to other organs.

INDICATIONS FOR THE LOWER SEGMENT OPERATION

Claye has performed the lower segment operation in thirty-five cases in four years, seventeen of which were cases of contracted pelvis. He now carries out trial labor in all cases of disproportion unless the pelvis is very small. He allows a variable time for the head to engage after rupture of the membranes, provided there is no maternal or fetal distress. Of the remaining cases four were examples of inertia and five of occipitoposterior position. He considered the operation particularly advantageous for the late case. Here the lower segment is thinned out and the hemorrhage is negligible. But if the operation is performed before labor the lower segment is often not formed and thick muscle has to be incised. There is much hemorrhage, which is difficult to control. Therefore for patients operated on before labor, when the risk of infection is minimal, Professor Claye still performs the classic cesarean section. Other indications for which he sometimes performed the lower segment operation were heart disease (when he intended to perform the classic operation but the patients forestalled him by going into labor), carcinoma of the cervix and brow presentation.

INDICATIONS FOR THE CLASSIC OPERATION

Claye's classic cesarean sections numbered 125, of which ninety-two were performed for contracted pelvis with disproportion. The two next most frequent indications were heart disease and placenta praevia (seven cases each). The decision to operate for heart disease was reached in consultation with a cardiologist. If the patient was considered fit to stand the operation and unlikely to bear the strain of another pregnancy well, section with bilateral salpingectomy was done. All the mothers and babies did well. Cesarean section has the great advantage that sterilization can be carried out at the same time. Claye seriously considers section in all cases of complete placenta praevia in a primipara in good condition when the baby is alive and in good condition. As the lower segment is seldom thinned out in placenta praevia and may show large vessels, Claye always does the classic operation. But his treatment of choice for placenta praevia is Willett's forceps. Toxemia he considers a rare indication for cesarean section. In one case it was chosen in order that the patient might be sterilized at the same time. He no longer performs section for accidental hemorrhage, as he believes that it increases the maternal risk.

The Radium Treatment of Cancer

The seventh annual report of the National Radium Trust and Radium Commission, which has just been published, reviews the radiotherapy of cancer in Great Britain as carried out at thirteen national centers and a number of smaller centers and recognized hospitals. In most there has been a tendency to replace the interstitial use of small quantities of radium by the external application at a considerable distance of large quantities. A difficulty in attempting to assess the value of different methods of treatment by the use of survival rates is that a large number of combinations of different methods of treatment have been used. In the treatment of carcinoma of the breast for example, as many as eighty-six combinations were distinguished. The most noticeable change in treatment is an increasing use of high voltage x-rays and a diminution in the practice of interstitial needling in carcinoma of the cervix. In carcinoma of the breast the main change has been in the use of surface radiation. Patients with carcinoma of the breast in later stages have a slightly better three year survival rate under interstitial irradiation combined with excision than under the former alone. In carcinoma of the cervix, x-rays combined with the "Stockholm method" give a greater freedom from recurrence than the latter alone. In carcinoma of the tongue a high mortality is found associated with the operation of block dissection of the cervical glands.

CANCER OF THE BREAST

For the purpose of analysis, the cases have been divided into three stages: (1) growth limited to the breast, (2) axillary glands invaded, (3) further invasion. When the growth was still in stage 1, more than two thirds of the patients were alive at the end of the third year after treatment and half were alive five years after treatment. The low survival rate in stage 3 is accounted for by the fact that in many cases only palliative treatment was possible.

Percentage Net Survival Rates from All Methods of Treatment in Which Radium Was Employed

Stage of Disease	Net Survival Rate at Three Years	Net Survival Rate at Five Years
1	70.1 (340)	50.0 (309)
2	40.3 (627)	22.4 (144)
3	18.8 (711)	13.6 (219)
All stages	37.2 (1,678)	24.6 (472)

The number of cases is given in parentheses.

Percentage Net Survival Rates from All Methods of Treatment in Which Radium Was Employed

Stage of Disease	Net Survival Rate at Three Years	Net Survival Rate at Five Years
1	67.1 (370)	49.4 (85)
2	48.4 (539)	43.7 (122)
3	29.8 (708)	24.0 (196)
4	12.6 (351)	7.2 (72)
All stages	37.3 (2,058)	31.1 (475)

CARCINOMA OF THE CERVIX

Carcinoma of the cervix was considered in four stages: (1) growth limited to the cervix with the uterus mobile; (2) lesion spreading into fornices with or without infiltration of the para-

metrium, the uterus retaining some mobility; (3) nodular infiltration of the parametrium with limited mobility of the uterus; (4) massive infiltration of the parametrium extending to the pelvis.

CARCINOMA OF THE TONGUE

In the earliest stage, when the growth is confined to the tongue and no glands are involved, about one half of the patients are alive after three years and one fourth after five years. In the more advanced stages the survival rate is low.

PARIS

(From Our Regular Correspondent)

May 15, 1937.

Regulations for Organization of Public Health Service

France is divided for administrative purposes into eighty-six departments, each of which has a representative of the central government, situated in Paris, termed the prefect, whose duties correspond to those of a state governor in the United States. The departmental service of inspection and control of public health, as created by a law passed in October 1936, is directed by an inspector of hygiene. The minister of public health, Mr. Sellier, issued orders, April 17, which aim to reorganize the public health service of each department on a new basis. The inspector of hygiene will be obliged to live in the principal city (county seat) of the department to which he has been assigned and will be responsible to the prefect for carrying out all instructions received from the ministry of public health. The inspector's reports, after having been sent to the prefect, will be forwarded to the minister of public health in Paris. The inspector of hygiene must be well qualified to deal with all questions relating to public health and social hygiene that may arise. He will have direct control of the work of all organizations receiving state aid and will act as secretary of the departmental council of hygiene and all allied bodies whose purpose is to provide for and coordinate the sanitary organization of his department.

Inspectors must pass an examination, must be French citizens and must have not only the degree of M.D. but also one of public health from a French university. They must also have served three months as assistants in a departmental service of hygiene or in the health department of a city of at least 100,000 inhabitants.

The examining board will include the directors of hygiene and of personnel of the ministry of public health, an inspector general of hygiene, a competent sanitary engineer and two members of the superior council of hygiene chosen from the faculties of the medical schools. The successful candidate will serve a year on probation before being definitely appointed. The age limit for candidates will be 60 years, and they will not be allowed private practice, except in cities of less than 50,000 inhabitants. Any orders pertaining to public health that are issued by mayors of cities or smaller aggregations must now be submitted to the prefect and the council of hygiene of each department before being put into effect.

Cysts of the Lung

At the April 9 meeting of the Société médicale des hôpitaux, Brulé and his associates reported the case of a man, aged 38, with intense dyspnea and bronchitis. He had been treated for asthma and emphysema since the age of 9 years. Radiographic (in profile) examination of the chest revealed the presence of aerohydrous areas at the base of the right lung, on the basis of which a clinical diagnosis was made of congenital pulmonary cysts, which was confirmed at necropsy. There was also an advanced pulmonary emphysema associated with areas of sclerosis, and a number of cavities in the right lower lobe filled with pus. These cavities did not show any of the characteristics of congenital cysts and hence were regarded as pseudocysts, the result of the emphysematous changes. The authors thought that such secondary cysts were often mistaken for congenital cysts.

Armand-Delille and his associates studied congenital cysts (congenital pseudobronchiectases) in children. In pulmonary tuberculosis in children they observed not only cases of typical bronchiectasis associated with previous inflammatory changes but also changes, as seen radiographically, in the form of clear images with a more or less circular outline as confirmed by iodized oil. They were able to find lesions showing the picture of cysts in ten cases at necropsy. In only one had an antemortem diagnosis been made, and this with the aid of iodized oil.

The first paper read at the April 16 session was by Sayé of Barcelona, Spain, who stated that there were three principal types of pulmonary air cysts: first, the giant or balloon cyst type, which varies greatly in size; second, the polycystic lobar type of varying aspect, at times difficult to differentiate from tuberculosis; and, third, cysts associated with the obstruction of certain bronchi. The last named are especially important to recognize. These cysts can suppurate and be mistaken for an encysted pleurisy.

Ameuille and Rendu read a paper on the significance of pulmonary cysts in adults. They agreed with the opinion that cysts undoubtedly occur which are of congenital origin, but, in middle aged and older adults, air cysts are found which appear to be of recent origin; i. e., acquired. The authors emphasized the difficulty of differentiating between cysts and other intrapulmonary cavities containing air. Acquired cysts in adults are evidently of emphysematous origin.

Pierre Lereboullet, Marcel Lelong and Jean Bernard presented the thoracic films from a nursling of 4 months who, after a febrile course of short duration, suddenly showed on the films an ovoid gaseous area (occupying the lower half of the left lung) with thin borders. After remaining stationary for two months, the area gradually changed position from the periphery to the center of the lobe and then disappeared. They considered this area an example of a huge emphysema. Two similar cases were recently reported by them as "obstructive emphysema." Debré believed that many cysts were the result of an obstructive emphysema.

Cathala and Brincourt reported a case of multilocular cysts of the lung in a child. In spite of the typical radiologic picture and numerous negative examinations for tubercle bacilli, the child was kept in a sanatorium for fourteen months because of a history of tuberculosis in the family.

Comby believed that there was a close relation between bronchiectases and pulmonary cysts in both the congenital and acquired forms.

A Rapid Method of Production of Tetanus Antitoxin

At the March 13 meeting of the Société de biologie Ramon, Metayer and Mustapha reported a rapid method of obtaining tetanus antitoxin from horses. If the horses have been vaccinated against tetanus one or several years previously and are then immunized with progressive doses of tetanus anatoxin to which tapioca has been added, only three weeks is required after beginning this hyperimmunization before one is able to obtain a serum containing sufficient tetanus antitoxin to be employed in specific treatment. Horses not previously vaccinated and given the same hyperimmunization yield a serum incomparably less rich in antitoxin.

International Congress on Psychiatric Problems in Children

A meeting in Paris on psychiatric problems in children will begin July 24 and end on the 28th. The following specialists will read papers: Hamburger of Austria, Ley of Belgium, Weygandt of Germany, Cerietti of Italy, Bouman of the Netherlands, Claparede of Switzerland, Oseretzky of Russia

V 10
1937

and Healy of the United States. The three questions to receive special consideration are (1) general psychiatry, (2) psychiatric problems in school children and (3) psychiatry from the medicolegal standpoint. Those wishing to take part in the congress or to receive information regarding the meetings can write to Dr. Grimbert, 11 rue Duroc, Paris.

BERLIN

(From Our Regular Correspondent)

May 12, 1937.

Virus Research

An extensive discussion of virus research and virus disease took place recently in the Hamburg Medical Society. Kurt Herzberg, Greifswald hygienist, spoke first on "Virus Research as a Present-Day Activity." Thus far one has had to frame a satisfactory definition of virus in terms of an obligatory cell parasitism. Heretofore, only animal experiments based on photodynamics have produced favorable chemotherapeutic results. In man the chain of infection is quickly broken, as a rule; frequently not a single second transmission occurs. The interrelation of virus and tumors can be demonstrated on the basis of observations made by Rous and Shope. Attention is called to the difference existing between, on the one hand, those chicken sarcomas and rabbit papillomas indisputably produced by virus and, on the other hand, those rabbit carcinomas produced by painting with tar. The infective material of tumors in animals acts with respect to specificity like types of virus. It is a remarkable fact, moreover, that the same virus can exhibit twofold pathogenic properties; the virus of the Shope fibroma, for example, may at first act as a virus of fibroma and again as a virus of inflammation. And there are other examples in point.

Nauck discussed the pathology and cytology of virus diseases. The study of cellular and tissue changes provides in connection with the demonstration of an intracellular agent important data on the biologic behavior of certain types of virus in the organism attacked. The histopathologic alterations that have already for some time been the object of well known exhaustive investigation are in their totality nonspecific for the agents of virus groups. It is a question of inflammatory proliferative and degenerative processes which, according to the type of virus, differ greatly both in extent and chronological succession. Particular types of virus are recognized not only by the difference in the resultant tissue reactions but also by the predilections they possess to attack certain organs or tissues. Observation of the histopathologic reactions provides a basis for a tentative classification, according to the so-called tropisms or affinities for particular cells and tissues. A virus may thus be called neurotropic, dermotropic, fibrotropic, hematotropic, lymphotropic or pneumotropic, or, conversely, it may be termed polyorganotropic. These special affinities for certain tissues and cells are not absolutely invariable, since they may be dissimilar in different animal species and in altered conditions of infection. This modification of the pathogenic properties is of practical value for the obtaining of vaccines. Then too the appearance of nuclear and cellular inclusions in many types of virus is interpreted as an expression of "cytotropism." Herzberg stressed the fact that in a number of virus diseases the inclusion bodies may be ascribed with certainty to a multiplication and accumulation of the agents within the cell. The circumstances of inclusion body formation, however, vary not only with different types of virus but also according to what cells are affected. The cytopathology of virus diseases requires on this account to be further investigated, especially with respect to the interrelation of intracellular development of virus and the specific cell reaction.

The third speaker was Carl Hegler, clinician. A satisfactory classification of virus disease is, he said, at present not yet possible, either on the basis of clinical symptoms or according to the manner of transmission, the length of incubation, the amount of the virus, the outlook with regard to immunity or, finally, according to the tropism of a particular virus. Noteworthy in psittacosis is the comparative rarity of transmission from man to man; transmission to a third person has never been known to take place. Psittacosis does not confer complete immunity in every case; reinfections have been reported. Mention was made of the so-called Gordon biologic test for Hodgkin's disease: rabbits and guinea-pigs that are inoculated intracerebrally with a suspension of lymphadenomatous tissue present a meningo-encephalitis, which terminates fatally within ten to thirty days. Transmission from animal to animal does not take place; by filtration the virulence is considerably weakened but not destroyed. Various follow-up observations indicate the presence of a specific, living agent that in all probability is a virus. According to observations of influenza in swine, especially in young pigs, and studies of transmission of the disease, influenza in man may be regarded as a virus disease. The supposition is that the virus infection (by means of a serous inflammation perhaps) acts as a pacemaker for the bacteriologic agent. It seems virtually certain that a similar circumstance, the existence of an unknown virus which performs this pacemaker rôle, underlies scarlet fever, erysipelas and acute articular rheumatism. Whooping cough and dysentery too should perhaps be included in this group. At present there is no specific chemotherapeutic substance available for a single virus disease. Protective material contained in convalescent serum works partial successes in poliomyelitis, measles, scarlet fever and erysipelas. The ideal objectives remain twofold: active protective inoculation with weakened virus (as in variola, rabies and yellow fever) and the production of a virucidal serum.

VIENNA

(From Our Regular Correspondent)

April 21, 1937.

Studies of Evipan Narcosis

Dr. E. Trevani reported at the last session of the Vienna Physicians' Society on the use of evipan (the sodium salt of n-methyl-cyclohexenyl-methyl barbituric acid) to induce narcosis. In 2,500 cases in which this substance was utilized during the last five years the actual methods and the dosages were far from uniform. Clinical observations thus far indicate that it is not necessary to adhere rigidly to any single plan. However, the author found the following routine to be the best and most reliable: The patient is first prepared for narcosis by an injection of morphine. This is followed in from one to one and a half hours by a large initial dose of freshly prepared evipan, which the operator injects into the cubital vein of the opposite arm. Trevani varies the dosage according to the patient's age; patients aged from 20 to 30 receive 5 cc. at one injection, those between the ages of 30 and 45, 4 cc., those aged from 45 to 60, 3 cc. and patients over the age of 60, 1.5 cc. During the course of the operation an additional dose of from 0.5 to 3 cc. is injected as needed and on this account Trevani permits the injection needle to remain in the vein subsequent to the initial injection. As soon as the patient becomes unconscious, as indicated by a relaxation of the lower jaw, the intervention may be begun. Accordingly, all should be in readiness for the surgical procedure before the first injection is administered. Trevani does not estimate beforehand the exact amount of the solution necessary. He favors fractionated injections with large initial doses. Only rarely are patients encountered who show themselves resistant to the drug. In such cases one has to resort to ether narcosis. Since the decomposition of evipan takes place in the liver, any disease of that organ, even a secondary dysfunction, must be viewed as an absolute contraindication of this type of narcosis. Trevani mentions no other

contraindication. In the literature there are recorded eighty-six fatalities in a total of 4,000,000 evipan narcoses. Of these accidents, sixty occurred during the first two years, when the proper technic had not been developed. Overdosing was probably the responsible factor in a large majority of these deaths. On the basis of the foregoing observations, evipan narcosis may be assumed to be at least as safe as ether narcosis. Evipan narcosis offers the following advantages: It permits procedures of diathermy and cauterization to be carried on without danger of an explosion, it renders the use of narcotic masks, an inconvenience in surgical treatment of the throat and head, unnecessary, and it enables the surgeon to perform interventions on patients whose general condition would preclude the use of an ether or chloroform narcosis. Of even greater importance is the favorable psychic effect of the drug on anxious patients, who are often terrified when treated under local anesthesia, for injuries incurred in an accident, for example. Evipan should not be administered to ambulant patients, especially if the operation concerns the floor of the oral cavity, as the duration and profundity of the "after-sleep" cannot be estimated in advance. Patients to whom evipan has been administered must therefore be kept under observation.

In the discussion of Trevani's paper, many of the speakers called attention to the fact that the earlier mistrust of this method of narcosis is rapidly disappearing. In pediatric practice it has already been quite widely used in adenotomies and tonsillectomies, the dosage adjusted to the individual patient. About 1 cc. per minute is administered at both initial and subsequent injections, the amount varying from 1 to 5 cc. (the latter dosage has been administered to boys aged 14 years). Some surgeons have injected adults with total dosages as high as 18 or 20 cc. without apparent injury. In these cases coramin (a 25 per cent solution of pyridine betacarbonic acid diethylamine) served as an efficient postoperative "awakener." From the standpoint of gynecologic practice, Kahr has found evipan narcosis chiefly useful in the preparation of elderly women patients for complete narcosis before irradiation with radium. An uncontrollable singultus is reported to have been permanently abolished by an injection of 4 cc. of evipan. It was generally conceded in the discussion that the states of motor excitation often observed during or subsequent to evipan narcosis should be attributed chiefly to the administration of the total dose at one injection. Many surgeons spoke favorably of a combination of evipan narcosis with subsequent local anesthesia. The individual surgeon also keeps in mind that in addition to evipan solutions, which have to be constantly prepared afresh there is the finished product "Eunarcon" (likewise a barbituric acid derivative), the fractionated use of which for short or complete narcosis has been quite successful.

Microscopic Representation of the Surfaces of Living Organs

For the observation of living mucosa with the greatest possible microscopic magnification, various instruments and systems of lenses have been employed, the cystoscope, the colposcope and others. Thus far, however, enlargements up to a magnification of only about 30 diameters have been practicable for the observation of surfaces, and the instruments did not permit inspection of individual cells or their constituents. Dr. Pick, who holds the chair of anatomy at Vienna, has recently devised a new apparatus, which he demonstrated before the Physicians' Society. By means of this device he is able to obtain magnifications of 800 diameters of mucous surfaces and of surgically exposed organs. The apparatus consists principally of a microscope tube with an ocular and an exchangeable objective that is enclosed from the outside by a glass cover. There is also a small lamp that provides illumination. The tube may be inserted in any natural bodily cavity or wound cavity and then pressed against the mural lining with more or less strength as preferred. For a staining of any mucosa or tissue surface (or, more properly speaking, the constituents of the tissue) there are three fine tubules soldered into the tube itself and through these the staining solution is introduced. Illumination is derived from a pocket battery (dry cell). Precise adjustment of the apparatus from outside is readily practicable. Animal experimentation over a number of years has provided precise information on the stainability of living cells (and their constituents) as well as on the activity of pharmacologic substances. Thus it is possible to observe details that would not be discernible in a fixed sectional preparation. From use of this method of examining the surface or living tissue, results are forthcoming which apparently take the place of or provide an important supplement to exploratory excision. One may cautiously infer from the report that the new apparatus will make possible early diagnosis of alterations in tissue which is not permitted by the study of fixed sections. One can indeed, by Pick's method, examine the same area of tissue repeatedly without any damage. As staining substances, polychrome methylene blue (of the Unna type) and toluidine blue have proved best thus far. Neutral red and nile blue are practically without value. Great interest was aroused by the demonstration pictures. Among the visualizations were the filiform papillae of the tongue, the normal portio vaginalis uteri at a magnification of 140 diameters, the vaginal wall in a mild descensus, and normal epithelium of the oral mucosa. Visualizations of normal mucosa are easily interpreted, but interpretation of diseased tissues by the new method is distinctly as yet a thing of the future to be achieved after further experimentation. This means a thorough testing of Pick's apparatus with the largest possible material.

SWITZERLAND

(From Our Regular Correspondent)

March 15, 1937.

Second International Medical Week in Switzerland

The second International Medical Week in Switzerland was held at Lucerne. Attendance was even larger than that at the first Medical Week. The ideal that underlies these gatherings is to assemble the leading scientists from different lands for a discussion of common problems. The Swiss government was again the sponsor, and the sessions were officially opened by its representative. The papers were submitted according to sections. Only the "high spots" of the program can here receive mention.

The first paper, entitled "Drugs That Paralyze the Sympathetic Nerves," was read by Prof. J. A. Gunn of Oxford. Prof. François Rathery of Paris then spoke on "Lipoid Nephrosis and Its Treatment." Prof. Robert Bing of Basle, neurologist, discussed "Somatic Factors in the Etiology of Psychogenic Symptoms." Bing reiterated the objections, which he has constantly raised during the last twenty-five years, to Babinski's theory of hysterical symptoms, a theory that was generally accepted at about the turn of the century. Whereas Babinski disallowed the influence of physiologic factors in the etiology of pathologic psychogenic states, Bing adduces proof that the pattern of a whole group of typical hysterical syndromes is not merely that of an idea inherent in the patient's psyche but instead represents a structural functional development quite like an organic symptom complex. The majority of psychiatrists are today also of the opinion that the mechanism which governs the somatic symptoms in psychoneuroses is to be strictly differentiated from the original motive. The theory upheld by Bing has come to be accepted by nearly all neurologists. According to this theory hysterical "escape into illness" comes about through channels that are bounded by anatomic, physiologic and embryologic factors.

The topics of the second day were "Circulation, Respiration and Tuberculosis." Prof. E. P. Pick, Viennese pharmacologist,

V 10
1937

spoke first on "Self Protection and Regulation in the Circulation." He discussed the great significance of the physical regulation of the heart, the diastolic filling and dilatation, the venous back flow and so on. He called attention to the significance of pericardial regulation in pathologic circumstances; to the blood deposits many times capable of causing occlusion through the blocking of a vein, especially the venous hepatic plexus, which receives a large quantity of blood and is able by diminution of the circulating blood stream to exercise a protective effect like that of a venesection. The second type of defense mechanisms, those which chiefly regulate the circulation through the nervous system, is frequently influenced by chemical stimuli. A third class of protective vascular reactions is based on the cooperation of stimulating and protective chemical substances with the nervous mechanism that regulates circulation and with the discharging reflexes in particular. Prof. W. R. Hess, Zurich physiologist, next discussed "Central Regulation of Circulation and Respiration." If demands are made on the circulatory and respiratory systems by energetic exercise, the sympathicus acts as regulator. The centers that regulate circulation and respiration are located in the medulla oblongata, but the thalamencephalon too exerts notable influence.

BRONCHOSPIROMETRY

Prof. H. C. Jacobaeus of Stockholm then spoke on the subject "Results in Bronchospirometry." Professor Jacobaeus devised the technic of bronchospirometries and he has performed about 200 such operations. By this procedure the size and function (vital capacity, oxygen intake, and carbon dioxide excretion per time unit) of each lung can be gaged. The method is of practical value, especially in bilateral pulmonary tuberculosis. By bronchospirometry the functioning of the diseased lungs can be determined and there is a degree of correspondence between these observations and the results of clinical and roentgen examination. The procedure furthermore makes possible exact evaluations of pulmonary function under pneumothorax and thoracoplasty. Professor von Gröer of Lwów next spoke on "Allergometry in Tuberculosis." Allergometry is a method by which the actual individual allergic condition of the organism in relation to certain allergens, tuberculin for example, can be determined in tuberculous patients. By a repetition of such determinations, corresponding alterations are established and therewith the course of that allergic path which the allergy will follow during infection is determined. Thus is provided a picture of the pathologic processes in tuberculosis which can be supplemented by clinical observations. The value of mathematically exact allergometric observation of tuberculosis lies in the fact that it permits a step by step, quantitative tracing of the pathologic factors in the disease. Consequently the procedure possesses a great importance for differential diagnosis and for prognosis.

Finally Prof. Phillip Schwartz of Istanbul spoke on "The Influence of Allergy on Tuberculosis." Professor Schwartz was able to determine the pathologic substratum of allergic reactions in phthisis. Types of the disease as it occurs in man can be artificially produced and brought under roentgenologic control. This artificially produced disease may be characterized by sudden manifestations as well as almost complete disappearance of tuberculous infiltration. Tuberculous infection elicits the same alterations in children as in adults. Six years after the onset of tuberculosis the immunobiologic effect may cease and a new infection characterized by precisely the same syndrome can be produced. The intra-alveolar accumulations, which are subject to complete dissolution, correspond to the clinically demonstrable infiltrations. This type of reaction is regarded as a result of hypersensitivity. The condition of the blood-cerebrospinal fluid barrier is decisive for the hematogenic dissemination of tuberculous infection. If it is open (as in early childhood, for example) a tuberculous meningitis may develop from hematogenic dissemination. The degree of sensitivity within or without the blood-cerebrospinal fluid barrier can at the same time be distinguished.

The third day was given over to the topic "Metabolism, Hormone and Vitamin." Prof. Albert Szent-Györgyi of Szeged, Hungary, spoke on "Oxidation, Fermentation and Intermediate Metabolism." This scientist, who has become famous through his isolation and identification of vitamin C, has recently studied the mechanism of biologic oxidation. He has obtained an insight into the main process of lactic acid fermentation. Oxalic-acetic acid performs an important catalyzing function in oxidation by acting as an intermediate hydrogen acceptor. The nutritive material is reduced to fumarate by hydrogen and then reduced by the respiratory ferment, the cytochrome being reoxidized to oxalacetate. With respect to carbohydrate in the muscles, respiration and fermentation are identical activities except for this difference, that in fermentation the triose is oxidized by pyroacemic acid and in respiration by oxalacetate. The product of oxidation is in either case pyroacemic acid. By partial oxidation and polymerization this can be resynthesized into carbohydrate. The regulation of this oxidation is likewise the function of oxalacetate. If the catalytic function of the last named substance is disturbed, only an incomplete oxidation will take place, with decarboxylation to acetone. The study of the respiratory processes has already led to the discovery of many interesting substances (riboflavine, co-dehydrase, cevitamic acid and so on). Professor Szent-Györgyi, in collaboration with Professor St. Rusznyak, a clinician (also of Szeged University), has discovered a new substance in paprika and lemons which apparently is of a vitamin character and which has been called vitamin P. Chemically it is of the flavone group.

Prof. Edward Mellanby of London, then discussed "Degenerative Alterations of the Nervous System Due to Faulty Nutrition." Clinically it is manifest that the impairment of the nervous system in pellagra, convulsive ergotism and lathyrism is a result of defective nutrition. Subacute, funicular myelitis, too, seems to be closely related to the same cause. A disturbance of metabolism underlies all these conditions. Similar degenerative alterations in the nervous system with debilitation of nervous conduction but without inflammatory reaction or hyperplasia of neuroglia can be readily produced in young animals by specific changes in the nutriment. Insufficient intake of carotene and vitamin A, especially in conjunction with increased ingestion of cereals, will elicit typical degenerative nervous impairment with disturbance of coordination in the course of a few months. The parts first to be affected are the ascending nerves of the spinal cord and the afferent peripheral nerves. The addition of a few milligrams of carotene to the daily regimen prevents the manifestation of any degenerative alterations, inhibits the progress of already present impairment and has a definite curative influence on diseased peripheral nerves. The hypertrophy and inflammation of epithelium in xerophthalmia due to vitamin A deficiency are associated with degenerative changes in the cells of the gasserian ganglion and with the weakening of the afferent fibers of the fifth cranial nerve. Xerophthalmia is apparently a terminal result of an impairment of neurotrophic regulation and the same may be said of other types of epithelial hypertrophy and inflammation arising from vitamin A deficiency. Despite the great importance of vitamin B for the nervous system, it cannot be demonstrated experimentally that absence of this vitamin from the diet will be followed by any debilitation of the nerve fibers or of the peripheral fibers (such as is observable in beriberi). The next paper, by Prof. Ferdinand Sauerbruch of Berlin, dealt with "The Surgical Treatment of Certain Types of Endocrine Disorders." The speaker stressed how difficult it is to determine when operation is indicated. Therapeutic concepts that grope blindly still prevail to a great extent in endocrinology. Surgical intervention is most clearly indicated if pathologic and

anatomic glandular alterations can be established with certainty and if the symptoms of illness are in part or wholly traceable to glandular hyperfunction. The favorable results of surgery are more doubtful in hypofunctional states such as myxedema, tetany and Simmonds' disease. The chances of a successful organ transplantation are slight, although instances of success have been reported. Then there is the question of the removal of endocrine organs not in themselves the agents of pathologic change in order to influence certain disease conditions: for example, total extirpation of the thyroid in the treatment of angina pectoris, unilateral adrenalectomy to relieve hypertension in youthful patients, hypophysectomy in diabetes, and parathyroidectomy in generalized bone and joint disease. Sauerbruch discountenances all the foregoing interventions. He is equally skeptical with regard to the denervation of the adrenals and of attempts to ameliorate disease of the heart and lungs by surgical operations on the sympathetic and vagus.

Prof. Hans Guggisberg, Berne gynecologist, discussed "The Hormone Relationship Between Mother and Child." The placenta is, so to speak, the central organ of fetal metabolism and at the same time it gives off specific substances that influence both mother and fetus. The fetus itself forms but little hormone. Its glands of internal secretion become active only toward term. The final speaker of the day was Prof. L. K. Wolff of Utrecht, Netherlands, who discussed "Methods of Determining Vitamin Content in the Blood and Their Significance for the Evaluation of the State of Nutrition in Man." Wolff has undertaken extensive investigations of this problem at the Hygienic Institute, of which he is head. He was able to demonstrate the presence of vitamin A, vitamin C and riboflavine in the liver of about 1,000 cadavers. The vitamin A and vitamin C content in the diet and in the blood of unemployed persons was also reckoned; 25 per cent of these persons were found to be deficient in vitamin A and 10 per cent in vitamin C. The vitamin A and vitamin C values in the blood appeared good indexes of the supply in the entire organism. Vitamin C values in the blood and urine showed a constant ratio.

A special session was this time held at the University Clinic of Zurich. Prof. Felix R. Nager, the first speaker at this session, discussed "The Pathology of the Labyrinthine Capsule." He referred in particular to a biologic peculiarity of this bone and said that the pathogenesis of the typical disease of the capsule of the labyrinth, known as otosclerosis, has yet to be explained. It is not unlikely that precisely by means of comparative studies of labyrinthine disease an understanding of these conditions will be arrived at. Professor Clairmont, surgeon, gave a survey of "The Surgery of Calcium Oxide Metabolism," in which was included a description of its biology, its importance in inflammations and in the healing of wounds, the formation of concretion, in which the parathyroids play a part, and the circumstances of the healing of fractures in joint, muscle and bone diseases. The disturbances of calcium oxide metabolism as a result of parathyroid dysfunction are hyperthyroidism and hypothyroidism; special studies of these conditions have been made at the Zurich surgical clinic. The speaker next discussed the therapeutic values of parathyroidectomy and other surgical measures, besides treatment with parathyroid extract and a viosterol preparation. Administration of calcium is unimportant for the production of hemastasis. Prof. Ernst Albert Gäumann, botanist, described "Problems of Immunity in Plants." This lecture was noteworthy because of the general biologic implications of these questions. Professor Löffler then spoke on "The Pathogenesis of Bronchiectasis." He has learned from extensive investigation that it is certain sections (the bronchus of the left lobus inferioris, the bronchus of the right lobus superioris and the cardiac bronchus) of the bronchial tree and not the pulmonary lobes as such which determine the localization of bronchiectasis. The asymmetry of these areas is striking. The term bronchiectasis implies only a dilatation; the purulent destruction of the pulmonary parenchyma with or without involvement of the bronchial wall is an abscess condition and not bronchiectasis. Cases of bronchiectasis are frequently combined with other lesions within the lungs (pulmonary cysts, for example) and in other organs. Bronchiectasis is often present in members of the same family. Although it is incontestable that bronchiectasis may be acquired, the congenital form of the disease must be thought of as a possible underlying condition in children who present histories of apparently unimportant colds and mild infections.

Two topics, "Pediatrics" and "Intoxications," were discussed on the fifth day. Professor Frontali of Padua reported his observations of "Hemorrhagic Diatheses in Childhood," emphasizing the significance of the capillaries. He also reviewed the concept of the endothelial constitution and the endothelial syndrome. Professor Pêhu of Lyons read a comprehensive paper on "Bone Alterations and Blood Diseases in Childhood." Prof. Wolfgang Heubner of Berlin, spoke on "Chronic Intoxications," with particular reference to the essential nature and above all the significance of the allobiotic effect, an active constituent which continues after the toxin itself has been eliminated. The accumulation of digitalis, for example, is no longer to be explained as a storing of toxin but more reasonably as a typical chronic intoxication. Another important example is chronic arsine poisoning. In chronic intoxication from hydrochinon one can observe a wholly new type of toxic effect; namely, a reversible conversion of black hair into white in experiments performed with cats. Prof. Heinrich Zangger of Zurich spoke on "Intoxications from Volatile Poisons" and described the research he has done on this type of poisoning. Zangger's investigations are of great importance for social and industrial hygiene, as poisoning from volatile substances is a common occupational hazard. Prof. Maurice Roch of Geneva submitted a paper on "The Treatment of Mushroom Poisoning."

On the final day, the lecture of Prof. J. F. Fulton of Yale University had to be canceled, as Professor Fulton was unable to reach Lucerne on account of illness. Prof. Karl Henschen of Basle gave a comprehensive report of his experimental studies of "The Crystalline Structure of the Bones and Its Relation to the Physiology and Pathology of the Skeleton." He is especially interested in the spongy tissues, and his crystallographic observations provide a broader understanding of bone disease. The final speaker was Prof. Pierre Decker of Lausanne, who discussed the present state of the problem of postoperative disturbances. He took up his own study of blood conditions with particular reference to the chlorine content.

The convention was a pronounced success. Three evenings were set aside for informal general discussions and these were attended by large numbers and lasted till midnight. The entire program was again organized by the *Schweizerische medizinische Wochenschrift* of Basle and all arrangements were once more in the capable hands of Prof. Alfred Gigon. The next International Medical Week will be held at Interlaken from Aug. 29 to Sept. 4, 1937.

Marriages

CECIL COLLINS SWANN, Asheville, N. C., to Miss Dorothy Everett Spalding of Montclair, N. J., May 8.

THOMAS PECK BUTCHER, Emporia, Kan., to Miss Freda Allyn Dickey of Kiowa, May 22.

LOUIS CARROLL ROBERTS to Miss Jessie Speight Ward, both of Durham, N. C., April 30.

MYRON L. KENLER to Miss Muriel Nina Marcuse, both of Jamaica, N. Y., May 30.

RICHARD J. KRAEMER to Miss Helen V. Flynn, both of Providence, R. I., April 24.

Deaths

John Henry Wyckoff ● New York; University and Bellevue Hospital Medical College, New York, 1907; practiced in New York since 1910; dean and professor of medicine at his alma mater since 1932; member of the Association of American Physicians and the American Clinical and Climatological Association; fellow of the American College of Physicians; past president of the American Heart Association and the Association of American Medical Colleges; chairman of the heart committee and formerly vice president of the New York Tuberculosis and Health Association; member of the medical advisory committee of the advisory board on industrial education, member of the board of administrative consultants of the department of hospitals and of the technical advisory committee on district health administration; was cited "for conspicuous and exceptional service" in France during the World War; director of the third medical division and visiting physician to the Bellevue Hospital; consulting physician to St. Luke's Hospital, Newburgh, N. Y.; St. Joseph's Hospital, Yonkers, N. Y., Good Samaritan Hospital, Suffern, N. Y., Mount Vernon (N. Y.) Hospital, Presbyterian Hospital, Newark, N. J., St. Agnes' Hospital, White Plains, N. Y., St. John's Hospital, Long Island, N. Y., and Southside Hospital, Bayshore, and consulting cardiologist to St. Joseph's Hospital, Far Rockaway, N. Y.; lieutenant colonel in the medical reserve corps of the U. S. Army; trustee of the New York Academy of Medicine, a member of the Technical Board of the Milbank Memorial Fund, and a member of the board of trustees of Rutgers University; aged 55; died, June 1.

Alfred Adler, widely known psychiatrist of Vienna and New York, died, May 28, suddenly in Aberdeen, Scotland, of heart disease, aged 67. Dr. Adler was born in Vienna and received his medical degree at the Medizinische Fakultät der Universität Wein, Austria in 1895, where he also studied philosophy, sociology and psychology. He was the founder of the School of Individual Psychology in Vienna, and was visiting professor of medical psychology at the Long Island College of Medicine in Brooklyn. Among his works that have been translated into English are "The Practice and Theory of Individual Psychology," "Understanding Human Nature," "The Science of Living," "Pattern of Life," "The Neurotic Constitution," "What Life Should Mean to You" and "Study of Organ Inferiority and Its Psychical Compensation." Dr. Adler was the editor of *Internationale Zeitschrift für Individual Psychologie*, and in 1935 founded and was editor of a companion journal in English known as the *International Journal of Individual Psychology*, published in Chicago. At the time of his death, he had been lecturing on psychopathology at Aberdeen University and was to have delivered lectures in Edinburgh, Liverpool, Manchester and London.

Franklin M. Stephens, New York; University of Pennsylvania Department of Medicine, Philadelphia, 1885; member of the Medical Society of the State of New York and the American Otological Society; fellow of the American College of Surgeons; formerly professor of otology at the New York Polyclinic Medical School and Hospital; served in various capacities in the Robert Packer Hospital, Sayre, Pa., and the New York Eye and Ear Infirmary; aged 77; died, May 20, of pneumonia following the amputation of his leg for gangrene.

Reginald St. Elmo Murray, Gardner, Mass.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1913; member of the American Psychiatric Association, the American Association for the Advancement of Science, National Committee for Mental Hygiene and the American Roentgen Ray Society; served with the Canadian Army during the World War; formerly connected with the veterans administration; aged 50; died, March 13, in New York, following an operation for brain tumor.

John Monroe Fisher ● Philadelphia; Jefferson Medical College of Philadelphia, 1884; clinical professor of gynecology at his alma mater; fellow of the American College of Surgeons; president of the Aid Association of the Philadelphia County Medical Society; during the World War was a member of the medical advisory board and the medical service corps; on the staffs of the Jefferson Medical College Hospital and St. Agnes Hospital; aged 78; died, May 20.

Elmer Goodman Balsam ● Billings, Mont.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1906; past president of the Montana State Board of Health; secretary of the Medical Association of Montana; on the staffs of the Billings Deaconess Hospital and St. Vincent's Hospital; aged 52; died suddenly, May 13, in a local hospital of an embolism following a minor knee injury.

John Morton McWharf, Ottawa, Kan.; University of Buffalo School of Medicine, 1868; member of the Kansas Medical Society; a member of the board of trustees of Ottawa University, 1897 to 1912, and vice president of the board, 1909 to 1912; formerly member of the state legislature; aged 94; died, March 20, in the Menorah Hospital, Kansas City, Mo., of carcinoma of the prostate.

Orra Edgar Patterson, Whiterocks, Utah; George Washington University School of Medicine, Washington, D. C., 1908; member of the Utah State Medical Association; served during the World War; for many years connected with the Indian Service; aged 57; died, March 18, in St. Mark's Hospital, Salt Lake City, of coronary occlusion and chronic gallbladder disease.

Howard R. Keylor, Walla Walla, Wash.; College of Physicians and Surgeons, Baltimore, 1882; member and in 1895 vice president of the Washington State Medical Association; formerly member of the state board of medical examiners, acting as its secretary; for many years overseer of Whitman College; aged 76; died, March 27.

Frank Duane Mower, Newberry, S. C.; Tulane University of Louisiana Medical Department, New Orleans, 1907; member of the South Carolina Medical Association; past president of the Newberry County Medical Society; served during the World War; aged 57; died, March 20, of cardiovascular renal disease.

Archibald Duncan MacLaren, Port Huron, Mich.; Long Island College Hospital, Brooklyn, 1876; member of the Michigan State Medical Society; past president of St. Clair County Medical Society; police commissioner in 1900 and later health commissioner; aged 88; died, March 22, of myocarditis.

Albert Marsh, Newton, Mass.; Albany (N. Y.) Medical College, 1885; member of the Massachusetts Medical Society; assistant in obstetrics at his alma mater from 1886 to 1889 and instructor in obstetrics from 1889 to 1891; aged 77; died, March 17, of coronary thrombosis.

James John McLinden, Waterbury, Conn.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; member of the Connecticut State Medical Society; on the staffs of St. Mary's Hospital and the Waterbury Hospital; aged 60; died, March 16, of pneumonia.

Willard Lloyd McCormick, Bellevue, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1932; member of the Michigan State Medical Society; aged 32; died, March 20, in the Nichols Memorial Hospital, Battle Creek, of pneumonia.

Jefferson Davis, Toccoa, Ga.; Atlanta Medical College, 1884; member of the Medical Association of Georgia; past president of the Stephens County Medical Society; formerly state senator; served during the World War; aged 70; died, March 30.

William Tupper Elliott ● Helper, Utah; Northwestern University Medical School, Chicago, 1916; past president of the Carbon County Medical Society; served during the World War; county physician; aged 47; died, March 29, of coronary occlusion.

Frank Clark Myers, Spokane, Wash.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1883; formerly connected with the Indian Service; aged 83; was found dead, March 20, of myocarditis and arteriosclerosis.

William L. Fisher, Lake Charles, La.; Tulane University of Louisiana Medical Department, New Orleans, 1895; for many years parish coroner; on the staff of St. Patrick's Hospital; aged 71; died, March 7, of cerebral thrombosis.

Joseph Archambault, Fort Kent, Maine; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Que., Canada, 1893; aged 58; died, March 31, of lobar pneumonia and influenza.

Arthur Joseph Parker ● Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1920; fellow of the American College of Surgeons; on the staff of the Greenpoint Hospital; aged 40; died, March 19.

James Wilburn Macy, Wichita, Kan.; College of Medical Evangelists, Los Angeles, 1936; resident physician to the Sedgwick County Hospital; aged 40; died, March 7, as the result of injuries received in an automobile accident.

Reuben Zimmerman ● Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1927; aged 33; on the staff of the Beth Israel Hospital, where he died, March 9, of rheumatic heart disease.

William Henry Connor ✱ Medical Inspector, Commander, U. S. Navy, retired, Coronado, Calif.; Harvard University Medical School, Boston, 1906; entered the navy in 1910 and retired in 1934; aged 56; died, March 21.

Rufus Alonzo Moorer, Georgiana, Ala.; University of the South Medical Department, Sewanee, Tenn., 1901; member of the Medical Association of the State of Alabama; aged 68; died, March 5, in a hospital at Greenville.

Anna Johns Gesler, Narasaravupet Guntur District, Madras Presidency, India; Woman's Medical College of Pennsylvania, Philadelphia, 1926; a medical missionary; aged 41; died, March 13, of ectopic pregnancy.

John Alexander MacFadyen ✱ Worcester, Mass.; University of Vermont College of Medicine, Burlington, 1906; member of the American Urological Association; aged 64; died, March 30, of coronary thrombosis.

John Ramsey McElroy, Newcomerstown, Ohio; University of Wooster Medical Department, Cleveland, 1880; formerly postmaster and member of the board of education; aged 89; died, March 30, of bronchopneumonia.

Edward M. Fleenor, Johnson City, Tenn.; Chattanooga (Tenn.) Medical College, 1898; member of the Tennessee State Medical Association; aged 67; was killed, March 29, in an automobile accident near Augusta, Ga.

Michael Joseph Kelley ✱ Watertown, Mass.; University of the City of New York Medical Department, 1882; member of the school committee and board of health; aged 79; died, March 21, in West Palm Beach, Fla.

John Addy Sponagle, Middleton, N. S., Canada; Halifax Medical College, Halifax, N. S., 1883; served with the Canadian Army during the World War; for two terms mayor of Middleton; aged 76; died, February 19.

David Burt Willson Martin, Ingomar, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 66; died, March 14, in St. John's General Hospital, Pittsburgh, of uremia and carcinoma of the prostate.

Willmer Armstrong Latimore, Pittsburgh; Eclectic Medical Institute, Cincinnati, 1897; aged 67; died, March 26, in the Homeopathic Hospital, of pneumococcic meningitis, following influenza and otitis media.

John Wicker Echols, McAlester, Okla.; Kentucky School of Medicine, 1894; formerly prison physician; for many years a member and at one time president of the board of education; aged 65; died, March 22.

Laird O'Neill Miller ✱ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 61; on the staff of the Allegheny General Hospital, where he died, March 18, of bronchopneumonia.

Marshall Edward Chambers, Vinson, Okla.; University of Nashville (Tenn.) Medical Department, 1900; member of the Oklahoma State Medical Association; aged 67; died, March 30, of heart disease.

John Elzo Newland, Center Point, Iowa; Hahnemann Medical College and Hospital, Chicago, 1917; member of the Iowa State Medical Society; aged 43; died, March 13, of carcinoma of the lung.

Harry Levy, Birmingham, Ala.; Columbia University College of Physicians and Surgeons, New York, 1905; member of the Medical Association of the State of Alabama; aged 57; died, March 23.

Benjamin Perry Matheson, Fort Myers, Fla.; Medical College of the State of South Carolina, Charleston, 1890; aged 73; died, March 31, in a hospital at Orlando, of nephritis and arthritis.

William Green Eggleston, Oakland, Calif.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1881; aged 77; died, March 29, of pneumonia.

John Leander Fierstone, Long Beach, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1882; aged 78; died, March 29, of arteriosclerosis and nephritis.

Rufus C. Jones, York, Ala.; Medical College Montezuma University, Bessemer, Ala., 1898; aged 78; died, March 15, in the South Highlands Infirmary, Birmingham, of pneumonia.

Ira Elton Neer, Miami, Fla.; St. Louis University School of Medicine, 1904; served during the World War; aged 61; died, March 30, in a local hospital, of cirrhosis of the liver.

Joseph Levering McCabe, Denver; Medical College of Virginia, Richmond, 1917; connected with the Veterans Administration; aged 44; died in March at Williams, Ariz.

Bertha Frederica Carl Frommell, Orlando, Fla.; Woman's Medical College of Pennsylvania, Philadelphia, 1896; aged 64; died, March 13, of coronary thrombosis.

Anna Law Avard, Scranton, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1894; aged 70; died suddenly, March 29, in Selma, N. C., of heart disease.

Herbert William David Garred, Charleston, W. Va.; University of Maryland School of Medicine, Baltimore, 1928; aged 34; died, March 12, of edema of the brain.

Milber Brink, Boyden, Iowa; Rush Medical College, Chicago, 1884; aged 86; died, March 4, at Estherville, of arteriosclerosis and carcinoma of the esophagus.

John Floyd Pruett ✱ San Francisco; Stanford University School of Medicine, San Francisco, 1914; served during the World War; aged 50; died, March 17.

Marion J. Nicholson, Stephens, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; aged 74; died, March 20, of carcinoma of the rectum.

George Watson Fowler, Marengo, Ill.; College of Physicians and Surgeons of Chicago, 1891; aged 85; was found dead in his office, April 13.

Francis Frederick Malone, Los Angeles; Northwestern University Medical School, Chicago, 1904; aged 60; died, March 9, of coronary thrombosis.

Annette E. Lamphear ✱ New York; Woman's Medical College of the New York Infirmary for Women and Children, 1890; aged 72; died, March 27.

Charles Purdy Lindsley ✱ New Haven, Conn.; Yale University School of Medicine, New Haven, 1878; aged 82; died, March 29, of arteriosclerosis.

Matthew Ohaver, Millersburg, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1902; aged 64; died suddenly, March 26.

Frederick S. Markel, Allenville, Mo.; Marion-Sims College of Medicine, St. Louis, 1892; aged 75; died suddenly, March 16, of heart disease.

William Walter Haven, Granite City, Ill.; Barnes Medical College, St. Louis, 1908 and 1909; aged 58; died, March 29, of cerebral hemorrhage.

James H. Erskine, Oakland, Calif.; Cleveland Homeopathic Medical College, 1898; aged 77; died, March 29, of chronic myocarditis.

George Willment Forester, Santa Ana, Calif.; Drake University Medical Department, Des Moines, Iowa, 1894; aged 73; died, March 28.

Thomas Popham McCullough, Peterborough, Ont., Canada; Trinity Medical College, Toronto, 1888; aged 77; died, March 18.

Alexander McLeod, Wroxeter, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1914; aged 54; died, March 4.

Colon Beck, Clyde, Ohio; Eclectic Medical Institute, Cincinnati, 1897; aged 66; died, March 31, of uremia and cerebral hemorrhage.

Walter Jackson Coleman, Mineola, Texas; Medical College of Alabama, Mobile, 1888; aged 76; died, March 28, of myocarditis.

William Milton Mather, Tweed, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1886; aged 78; died, March 16.

J. Frank Harris, Sarasota, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1884; aged 80; died, March 28.

Ralph Robert Barker, Jasper, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1910; aged 50; died, March 20.

John Boggs Garrison, Hopewell, N. J.; New York Homeopathic Medical College, New York, 1882; aged 88; died, May 19.

Eber Whitney Gurley, Cleveland; Cleveland Homeopathic Medical College, 1898; aged 61; died, March 2, in Long Beach, Calif.

Ruce Marion Miller, Ivyton, Ky. (limited license in Kentucky, year unknown); aged 78; died suddenly, March 22.

Edward Lowell MacNamara, Syracuse, N. Y.; Syracuse University College of Medicine, 1897; aged 62; died, March 17.

Frank T. Eisenman, Los Angeles; Louisville (Ky.) Medical College, 1888; aged 75; died, March 12.

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1937

Bureau of Investigation

DR. H. WILL ELDERS

The Federal Trade Commission Orders Elders' Message to Yearning, Childless Females Modified

The Federal Trade Commission, under date of April 5, 1937, ordered H. Will Elders, his representatives, agents and employees, to cease and desist from representing either directly, indirectly or by implication, endorsements or testimonials of others, that "Dr. H. Will Elders' Filled Prescription for Women," "Dr. H. Will Elders' Private Prescription Sanitary Douche" and "Dr. Elders' Laxative Lozenges" constitute a cure, remedy or competent and adequate treatment for sterility in women.

According to the biographic files of the American Medical Association, H. Will Elders of St. Joseph, Mo., was born in 1874 and was graduated in 1894 from the American Medical College of St. Louis, a school which is now extinct. Elders was licensed in Missouri in 1894.

Typical advertisement of Elders' "sterility cure."

H. W. Elders has been in the mail order "patent medicine" business for a great many years. In 1911 Dr. Elders was advertising in the *Police Gazette* a "boon" for banishing all forms of the tobacco habit in from 72 to 120 hours. An analysis by the government chemists at that time showed that the "boon" consisted essentially of cocaine derivatives, strychnine and cinchona alkaloids. As the tablets were not a specific for the tobacco habit and as they did contain "injurious drugs or ingredients," the product was declared misbranded by the Food and Drug Administration in 1911. Elders pleaded guilty and was fined $100 and costs.

In 1924 Dr. Elder was offering to childless women through paid advertisements in the daily press a free copy of a "new book" by Dr. H. Will Elders. In addition to the "free book," the doctor had a "wonderful" aid for "every woman who wants to live a normal, happy home life with little ones around her." This "wonderful" aid was "Steriltone." In February 1935 this product was declared by the Food and Drug Administration to be sold under fraudulent therapeutic claims. The composition, according to the government report, was essentially plant drug extracts, including hydrastis and a laxative, with ferrous sulfate and arsenic trioxide. Another Elders nostrum that was the subject of a Food and Drug Administration Notice of Judgment was the "Female Re-Lax Lozenges."

Elders advertises his "patent medicines" by means of magazines, newspapers and circular letters. Typical of the Elders advertising methods is a large, four-page sheet distributed to childless women in 1936 and bearing the heading: "A Message of Joy to Every Woman Who Yearns for a Baby or Two of Her Own!" Under the banner heading is a picture of a mother with an infant at the breast. There is also a likeness of Dr. H. Will Elders, seated at a desk with pen in hand, apparently about to dash off one of his treatises on "Common Causes of Functional Sterility."

Elders sends to inquiring women two booklets "in plain wrapper." In the booklets Elders claims to "discuss many important subjects relating to the female sex. . . . They tell how you too may combat your troubles as thousands of others have. . . ." In the circular letters Elders mixes romantic biography, descriptive of his practice "in the picturesque Ozark country," with paragraphs exalting Dr. Elders. "I long ago realized that few physicians were competent to successfully treat ailments peculiar to the so-called weaker sex, and I decided to make this my life work and study. . . ."

Most ingenious was the Elders explanation of sterility. "In general, I want to say to you that in my experience treating women for this condition, the majority of cases are due to the closing of the fallopian tubes . . . blowing air or gas through them does not reach the ovaries and therefore could not get at the cause."

It is safe to say that few physicians would agree with the Elders idea of competence as expressed in Dr. H. Will Elders' Filled Prescription for Women. The quantitative formula per tablet, as given in the Federal Trade Commission's Docket No. *2673*, is as follows:

Powdered Viburnum Opulus	½ grain
Powdered Gentian	1 grain
Powdered Ferrous Sulfate—Dried	1 grain
Arsenous Acid	1/60 grain
P. E. Cascara Sagrada	1/12 grain
Powdered Hydrastis	1 grain
Powdered Aletris	1 grain
Powdered Caulophyllum	1½ grain
Powdered Pulsatilla	1 grain
Powdered Cimicifuga	1 grain
Desiccated Corpus Lutea (Sow)	½ grain

The quantitative formula per tablet for Dr. Elders' Laxative Lozenges is given as:

Cascarin	¼ grain
Aloin	¼ grain
Podophyllum Resin (U. S. P.)	¼ grain
Strychnine Sulfate	1/150 grain
Ext. Belladonna Leaves	1/16 grain
Oleoresin Ginger	⅛ minim

The formula for Dr. H. Will Elders' Private Prescription Sanitary Douche, based on a quantity of 101 pounds, is as follows:

Borate Tetra	100 lbs.
Chloramine-T	500 grms.
Menthol Crystals	260 grs.

The Federal Trade Commission further points out that Elders' medicines, "when used either together or singly, do not constitute a cure, remedy or competent and adequate treatment for sterility in women, nor for diseased conditions which are most frequently the cause of sterility. In cases of sterility due to disease or to anatomical abnormalities, such medicines would not be effective in removing the condition. Neither do said medicines used together or singly constitute a cure, remedy or competent and adequate treatment for female diseases or for leukorrhea or for delayed, suppressed or painful menstruation, nor are they effective in the treatment of such conditions and diseases where the same are caused by many diseased conditions. Representations to the contrary are neither accurate nor limited enough to express the true therapeutic effects of said medicines. . . . The representations of respondent, as aforesaid, have had and do have the tendency and capacity to confuse, mislead and deceive members of the public. . . ."

The Federal Trade Commission has ordered the respondent to file with the commission within sixty days a report in writing, setting forth in detail the manner and form in which he has complied with the cease and desist order. It will be interesting to note his future messages.

Correspondence

RELATION OF AMERICAN MEDICAL ASSOCIATION TO CERTIFICATION OF SPECIALISTS

To the Editor:—Dr. Paul C. Bucy of the University of Chicago has written to THE JOURNAL (May 29) criticizing certain portions of the address of Dr. C. Gordon Heyd on the "Relation of American Medical Association to Certification of Specialists" (THE JOURNAL, March 27, p. 1017).

Dr. Heyd, in spite of his multitudinous duties as President of the American Medical Association, informed himself accurately by correspondence and personal interviews about his subject before he prepared this address. Dr. Bucy, on the other hand, has made no such effort. No communication or enquiry has been received from him at the office of the Advisory Board for Medical Specialties (the coordinating board of all the special certifying boards), nor have the secretaries of the three boards specifically and critically referred to by him been asked whether the sweeping deductions he has drawn are based on fact.

For example, in speaking of multiple certification, or the certification of the same man by more than one board, he assumes that this is not permitted and argues at length that the American Boards of Ophthalmology and of Otolaryngology, which he mentions, ought to be willing to certify in both of these related specialties any man who can qualify. If he had enquired he would have learned that many such men now hold certificates from both of these boards and that others qualified may obtain them in the future. Moreover, it happens that a diplomate of the American Board of Obstetrics and Gynecology, a gynecologist who is an authority on radiation treatment of cancer, is even a member of the American Board of Radiology, serving as one of its examiners.

The sense of Dr. Heyd's remarks on this subject is that as a general procedure multiple certification is undesirable. A man cannot be a "specialist" in too many lines of work. Action taken on this matter at a meeting of the Advisory Board for Medical Specialties was that as a general principle multiple certification was "not viewed with favor." It has never been prohibited and is always left to the individual boards to decide whether the closeness of relationship in any given instance warrants permitting it.

Dr. Bucy speaks of the requirement by some boards that men to be certified must limit their practice to their specialty. He postulates from this that an individual certified as a gastroenterologist would not be permitted to treat a man with coronary disease who came to him as a sufferer from indigestion.

In the first place, there is no board in gastro-enterology. Men specializing in this work are to be certified basically by the American Board of Internal Medicine with a special examination and certificate issued by that board in gastro-enterology. Dr. Bucy's assumption that such a man would be restricted in his activities is entirely groundless. It is probable that neurosurgery (Dr. Bucy's specialty) will come under a similar plan of action by the recently created American Board of Surgery.

He says further that the purpose of these boards "must be to certify that a given individual is a competent practitioner in a special field." In a broad way this might be desirable, but for the present at least the purpose of these boards is to determine the competence of men who claim to be specialists, not merely practitioners, in these several fields. The public has suffered too long from too many self-styled specialists, and these boards are trying to make available the facts regarding those who are qualified for the claims they may have been making. Later, it may perhaps be advisable to undertake to distinguish and list those who have made themselves "proficient" to a greater degree than usual but who are not actually specializing in the various branches. Clearly the time is not ripe for this as yet.

Moreover, certain of the boards do not, for definite reasons, require a rigid limitation of work to their specialty, but Dr. Bucy does not seem to be aware of this.

He "differs sharply" with Dr. Heyd on the point that "research work should not be a part of the examination of a candidate for examination." I think his reaction is again due to a misunderstanding of intent. Creditable research work and publications count high in a candidate's favor in the eyes of the boards. Nevertheless many, many well qualified specialists have published little or nothing. They should not be and are not excluded on this account.

Finally, to clinch his argument, after being given an opportunity by THE JOURNAL to review Dr. Heyd's reply, he quotes from the booklet of the American Board of Obstetrics and Gynecology, which does require its candidates and diplomates to limit their work to obstetrics and gynecology. However, he does not quote the broad latitude of practice allowed in this board's definition of the specialty. Nevertheless, it is quite correct, as he says, that this board has ruled "physicians who accept male patients in their . . . practice . . . cannot be regarded as specialists in obstetrics and gynecology." There is an American Board of Surgery for these men if they are qualified, but there are other strong reasons for this rigid attitude.

The criticism is constantly being hurled at the medical profession of this country that our maternal mortality rates are much too high. In the survey of the New York Academy of Medicine it was found that fatal cesarean sections had been done by men listing themselves in the local medical directory of New York County as being "specialists" in proctology, laryngology, roentgenology and, in several instances, general surgery. It is my recollection that one of these fatal operations was performed by an "ophthalmologist."

What sort of specialists are these! Obviously, they are of the type best described as "specializing in the skin and all of its contents"! Can this board hope to correct such a situation if it does not clean house itself, by requiring its diplomates not to do general surgery? It is particularly unnecessary for these men to accept male patients. More important still, they are usually not qualified to undertake, for example, thyroid surgery, as does one gynecologist whom I know.

Obstetrics and gynecology, as a specialty, is certainly a broad enough field to occupy all the attention of any but a superman, if he is to do the best work possible in this specialty.

Until these men demonstrate that they recognize their limitations, always for the benefit of the patient, by not invading other general fields, how can it be expected that others, less qualified in this important specialty, will cease their activities such as were disclosed by the survey quoted?

PAUL TITUS, M.D., Pittsburgh.
Secretary of the Advisory Board for Medical Specialties, and Secretary of the American Board of Obstetrics and Gynecology.

MORTALITY FROM CESAREAN SECTION

To the Editor:—I am in no way qualified to judge whether Dr. D. L. Smith (THE JOURNAL, April 17) is right or wrong in his contention that low cervical cesarean section is preferable to the classic operation; but any one accustomed to weighing evidence may quarrel with his statement of the case. His table 2, for example, reports a total of three deaths out of 100 patients subjected to the low cervical operation and eight deaths out of 180 treated in the classic manner. Application of an elementary test (chi square for a fourfold table) shows that the apparent difference between these mortality ratios

V 10
1937

might very easily arise by chance alone. The apparent improvement, in the same table, from 1934 to 1935 is equally devoid of significance. Nor do I think one should speak of a 33⅓ per cent mortality in a group of six cases and compare this with other mortality rates. I am glad to acknowledge that Dr. Smith's table 5 is, in itself, convincing; but it is surely not unreasonable to ask that contributors of wholly statistical articles should display some knowledge of the elementary principles of statistics.

DAVID L. THOMSON, PH.D., Montreal.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

EFFECTS OF TEAR GAS

To the Editor:—I have a case about which I would appreciate your giving me what information you have. It deals with tear gas, and as we have but little contact with tear gas in this country, and I have no recent literature on it, I am unable to form a definite opinion on the matter. The case is as follows: Mr. A was sprayed with tear gas, whether in a closed room or in the open air I do not know. He was taken to a hotel and placed in one of the rooms. In getting him into the room there was some scuffling, and in this scuffling Mr. B brushed his face across Mr. A's sweater. Mr. B stated that he felt moisture on Mr. A's sweater, which was transferred to his face, and that he immediately began sneezing and his eyes began to water. Nine days later Mr. B consulted a physician and stated that he was still having considerable irritation in the nose. Examination by the physician apparently made him feel that Mr. B had a sinusitis and otitis media, as it was these conditions which he reported to the industrial accident commission, the claim being that in the performance of Mr. B's work he came in contact with an irritating toxic substance, which produced the sinusitis and otitis media. The questions I would appreciate your answering are: 1. Would the concentration of tear gas on Mr. A's sweater be sufficient to produce an irritation of Mr. B's nose and eyes, in view of the fact that Mr. B's face only brushed across Mr. A's sweater, and bearing in mind that at no time was Mr. B in the room filled with tear gas, nor was tear gas shot at him? 2. Granted that Mr. B could have had an immediate irritation from the tear gas, would such a slight contact with the tear gas cause a continued irritation for nine days? 3. Is it possible for tear gas, however concentrated, to produce sinusitis and otitis media? 4. Could the mild concentration of tear gas that Mr. B may have gotten be able to produce a sinusitis and otitis media? Frankly, the whole claim seems to me to be so far fetched as to be fantastic. It does not appear reasonable to my mind that an otitis media could develop from tear gas, and it appears highly improbable that a sinusitis could be developed from tear gas. In both instances, however concentrated, and all the more so in this particular case when, if the tear gas did have any effect on Mr. B it would of necessity through the contact have been mild, I even doubt that he could reasonably have had a mild nasal irritation. However, as I have had no experience with tear gas and I have no authoritative literature, I would appreciate your opinion and also any literature which would throw light on this particular case. ROBERT M. COATS, M.D., Weiser, Idaho.

ANSWER.—This query fails to mention the particular type of lacrimatory gas involved. In this country it is believed that police departments rely chiefly on the tear producing agent chloroacetophenone. There are many other lacrimators, such as benzyl bromide, xylyl bromide, benzyl chloride, bromo-ketone, di-bromo-ketone, bromo-acetone, dibromo-acetone, bromacetophenone, chloro-acetone, dichloromethyl ester, chlorosulfonic acid, methylchlorosulfonate, phenyl-carbylamine chloride, acrolein, stannic chloride, bromacetic ether and iodacetic ether. Because of the widespread availability of chloroacetophenone, it is reasonable to believe that this is the substance employed in the present instance. Following are references on the chemistry and toxicology of this substance: Gibson, A., *Mil. Surgeon* **67**:195 (Aug.) 1930; McNally, W. D., *J. A. M. A.* **98**:45 (Jan. 2) 1932; Tear Gas—Chloracetophenone, Query and Minor Note, *ibid. p.* 1105 (March 26) 1932; Muntsch, Otto, *Leitfaden der Pathologie und Therapie der Kampfstofferkrankungen*, Leipzig: Georg Thieme, 1936; Hanslian, Rudolf, editor, *Der chemische Krieg*, Vol. I, Berlin, E. S. Mittler & Sohn, 1937.

The formula of chloracetophenone is $C_6H_5COCH_2Cl$. It is a gray or white crystalline solid with an aromatic odor similar to that of locust blossoms. It is used in gun shells, the Stokes mortar, candles, grenades, air bombs and as a spray when dissolved in organic solvents such as ethyl acetate, or a mixture of benzine and carbon tetrachloride. It may also be mixed with smokeless powder and magnesium oxide; on burning, this mixture gives off finely divided chloracetophenone as a white, blue-gray or colorless vapor. It is insoluble in water and has no action on metals. It is neutralized or destroyed by hot sodium carbonate solution and may be removed from the skin with a solution of sodium sulfite in 50 per cent alcohol or with plain alcohol or glycerin. McNally recommends a 0.4 per cent solution of sodium sulfite in a mixture of glycerin 75 per cent and water 25 per cent for use in the eyes. Boric acid solution may also be employed in the eyes although chloracetophenone is not soluble in it. Alkaline eye ointments have been recommended in German reports, but formulas are not given.

Chloracetophenone is irritating to the eyes, exposed mucous membranes and skin in very small quantities. Lacrimation begins with a concentration of 0.3 to 0.5 mg. per cubic meter of air. Irritation of the nose occurs with 1 mg. per cubic meter; with 2 mg. per cubic meter use of the eyes is impossible owing to pain and flow of tears. At the latter concentration, irritation of the skin of the face and of the pharynx occurs. The highest concentration which a normal man can tolerate for one minute is 4 to 5 mg. per cubic meter. It is apparent that with a concentration of only a few milligrams in 1,000,000 cubic centimeters of air, the amount necessary to cause severe irritation of eyes, nose, pharynx and skin must be very small indeed, probably not more than a few thousandths of a milligram. As chloracetophenone is a solid, considerable quantities might remain impregnated in and spread on clothing, particularly if the material were sprayed in solution. A person who brushed his face against cloth so impregnated could easily pick up enough chloracetophenone to cause severe irritation; and as expressed in a Query and Minor Note in THE JOURNAL already cited, "It is reasonable to believe that enough irritation of the eyes or throat may be produced by tear gases to pave the way for secondary bacterial invasion, with ensuing pharyngitis and conjunctivitis on occasion." The possibility of the production of sinusitis and otitis media secondary to irritation by chloracetophenone is not at all "fantastic." Chloracetophenone is not the practically harmless substance it is commonly reputed to be. With direct contact it can cause permanent corneal opacity and resultant blindness, as in one of the cases reported by McNally. It frequently causes more than temporary interference with vision which may take several days to clear up.

PNEUMOTHORAX IN MINIMAL TUBERCULOSIS

To the Editor:—Have you any statistics to show which patients with definitely diagnosed minimal tuberculosis (pulmonary) do better; if first placed on bed rest treatment, or at once started off on artificial pneumothorax? What is the consensus with regard to these minimal cases of pulmonary tuberculosis? Has it swung away from bed rest first and gone to the more radical treatment with artificial pneumothorax treatment or is the latter not considered radical any more? Kindly also state what the indications are for thoracoplasty? Kindly omit name and address.

M.D., Massachusetts.

ANSWER.—Until recent years only a small percentage of patients with pulmonary disease had their lesions detected while in the minimal stage. Moreover, artificial pneumothorax was not thought to be indicated except in the presence of cavities, extensive disease and hemorrhage. Therefore not many reports presenting results of artificial pneumothorax in minimal pulmonary tuberculosis have been made. There are still a number of tuberculosis workers who have not employed artificial pneumothorax in the treatment of minimal disease and who strongly oppose its use. There are others who have employed it and after a sufficient period of observation of their patients strongly recommend it for all progressive minimal lesions. Turner and Collins of Chicago (*Am. Rev. Tuberc.*, December 1936) made observations on patients with minimal pulmonary tuberculosis treated by various methods and found "that the watchful waiting policy for evidence of progression proved costly and dangerous in several cases, and even fatal in a few. Therefore, we advocate immediate induction of artificial pneumothorax in definitely diagnosed minimal cases." These authors have not seen a "minimal pneumothorax case show progression of the disease in the treated lung or metastasis to a new lobe or exhibit an exacerbation of a previously existing lesion in the contralateral lung." After a careful study of 139 patients with minimal disease treated by various methods, they conclude: "The operative risk in minimal cases is negligible. Percentage of cases with free space is high in minimal cases. The high percentage of effective collapses in minimal pneumothorax cases is a guaranty of good results. Complications were so infrequent that they should not constitute a deterrent for the use of pneumothorax in early cases. The conversion of sputum in positive minimal cases is prompt and certain under pneumothorax treatment. The conversion time, hospital stay and total

disability were definitely decreased by the use of pneumothorax. Pregnancy in minimal cases is well tolerated if supported by pneumothorax. (Four of the cases receiving pneumothorax carried a pregnancy to term without any apparent ill effects.) The conservative treatment of minimal pulmonary tuberculosis requires the early induction of artificial pneumothorax. We believe that the existence of a minimal tuberculous lesion in an individual of 'teen' age is an absolute indication for artificial pneumothorax without delay."

Myers and Levine (*Am. Rev. Tuberc.* **31**:518 [May] 1935) reported fifty-two cases of pulmonary tuberculosis in which the treatment was instituted while the disease was minimal. In these patients, however, the disease was determined to be definitely progressive before treatment was instituted. Of the fifty-two patients, only three were found to have adhesions sufficiently extensive to interfere with the collapse. At the time the report was made, forty-two of the group were working or ready to work. Four had died, one of whom had miliary tuberculosis, another multiple lesions in various parts of the body, and the other two died of nontuberculous conditions. The results in this group of cases were "superior to those in other groups under our care, that had artificial pneumothorax instituted after the disease had become moderately or far advanced. They are also superior to those of other groups of minimal cases which we have observed on bed-rest treatment alone."

Since many of the reports on artificial pneumothorax therapy have come from institutions where patients have been given long periods of bed rest in addition to collapse therapy, it has been difficult to determine how much credit for the success obtained should be given bed rest and how much to collapse therapy. However, there are now groups of cases on record in which treatment was limited to sanatorium treatment or strict bed rest without the use of collapse therapy. For example, Wherrett (*Am. Rev. Tuberc.* **31**:62 [Jan.] 1935) observed for periods of from one to thirteen years 291 patients with minimal tuberculosis, who had only sanatorium treatment. In 28 per cent the results were not good. Pope (*New England J. Med.* **209**:765 [Oct. 19] 1933) has reported thirty-four cases in the "teen" age period in which the patients had minimal disease when admitted to the sanatorium. From four to seven years later, 40 per cent were dead.

Thus, it appears that artificial pneumothorax has a definite place in the treatment of progressive, minimal pulmonary tuberculosis. While the patient is lying in bed apparently doing well from the standpoint of absence of symptoms or even gaining in weight, the lesion may progress. Moreover, lesions may appear in the previously good lung while the patient is on strict bed rest. Since collapse of the diseased area definitely inhibits the proliferation of tubercle bacilli and stimulates the formation of scar tissue, it seems logical to bring about these two desired results at the earliest possible moment. Moreover, if the lesion has not yet broken down so that tubercle bacilli are being eliminated, one may prevent this occurrence. On the other hand, if the lesion has already broken down and tubercle bacilli are present in the sputum, artificial pneumothorax in most minimal cases quickly closes the lesion, so that the sputum becomes negative and then completely disappears. Obviously, it is better to treat a tuberculous process by artificial pneumothorax before cavities and adhesions have formed, before large volumes of lung tissue have been involved, and before the patient's general health has become undermined, than to wait until these conditions have developed.

Artificial pneumothorax should not be considered a radical procedure. Indeed, it has become a standard form of treatment. It is not as radical or as drastic as a long period of strict bed rest which takes the patient out of all activities of life, frequently causes him to lose his position, opportunities for promotion or even his entire possessions, and returns him to the world in a mental state that is more difficult to treat than the original disease. The patient with advanced bilateral tuberculosis must be treated in this drastic manner largely because of the contagiousness of his disease. He and society must suffer the consequences, but this is not true of the patient with minimal tuberculosis. Therefore the present campaign which emphasizes the detection of minimal tuberculosis in the lungs of apparently healthy persons and immediate treatment of all such lesions found to be progressive offers the only practical solution of tuberculosis control in the human family.

The patients for whom extrapleural thoracoplasty are now indicated are as follows: 1. Those with moderately or far advanced disease of the proliferative type in one lung who have been observed over a considerable period and for whom attempts at artificial pneumothorax have repeatedly failed, that is, the entire pleural space has been obliterated, frequently give histories of having had pleurisy with effusion at some previous time. Moreover, temporary interruption of the phrenic nerve should have been attempted and found wanting. 2. When the disease is of the exudative type and the patient is somewhat toxic, one should depend on bed rest and as much immobilization as possible through temporary interruption of the phrenic nerve until the toxemia disappears and the lesion appears to have stopped progressing before attempting extrapleural thoracoplasty. This group includes also patients with less extensive disease but with conditions otherwise the same as the foregoing but who have recurrent pulmonary hemorrhages or who have positive sputum. 3. For patients with disease similar in extent and nature to the foregoing and in whom partial artificial pneumothorax has been accomplished, but after a period of observation it is evident that adhesions will prevent adequate collapse of the diseased lung or that the walls of cavities are so thick and the fibrous tissue in the lesions so dense that pneumothorax cannot result in satisfactory collapse, it is futile to continue with artificial pneumothorax. This procedure should be discontinued and extrapleural thoracoplasty performed at once. 4. Fourth are patients who have been treated successfully by artificial pneumothorax for a time but who have voluntarily given up the treatment before the disease is well under control so that adhesions have formed, or patients who have lost the pleural space through the formation of obliterative adhesions and the disease has become reactivated or cavities have reopened. 5. For patients who have had an extensively diseased lung collapsed by artificial pneumothorax which fails to reexpand when the treatment is terminated, while constituting a very small percentage of patients treated by artificial pneumothorax, it is advisable to continue their refills or perform extrapleural thoracoplasty. 6. Sixth are patients who have been on artificial pneumothorax treatment but have had pleural pulmonary fistulas develop resulting in mixed infection empyemas. Tuberculous empyemas without the presence of fistulas usually do not require surgery, since they may be treated successfully by other methods, such as oleothorax. However, there is the occasional obstinate case in which thoracoplasty must be performed. 7. Some patients who have bilateral apical lesions with cavities, with the upper portion of the lung adherent to the chest wall, may now be treated successfully by partial bilateral thoracoplasty, to close the cavities and adequately collapse the diseased areas.

TREATMENT OF STRONGYLOIDES INFESTATION

To the Editor:—A man, aged 40, who came to me recently, was put in the hospital for an emergency appendectomy four months ago. After the routine laboratory work was done it was found that he had an infestation of Strongyloides intestinalis. He dates his present illness to beginning about seven years ago, when he had indefinite pains over the abdomen. Increasing constipation occurred, together with hemorrhoids and a fistula. During this time he also developed a prostatic discharge, which was persistent and annoying. Smears and cultures done by several good urologists were negative. In the past four months he has had three courses of hexylresorcinol crystoids, a course of santonin, and numerous other antihelminthics. Nov. 14, 1936, the stools were still strongly postive. Since the treatment was begun, the constipation has cleared up and the prostatic discharge has entirely stopped. The patient feels better physically but is extremely restless and is unable to sleep. Please advise me whether there is some new drug which would clear up this stubborn infestation. Any suggestions you have to offer will be greatly appreciated. Please omit name.

M.D., Florida.

ANSWER.—The peculiar life cycle of Strongyloides and its ability to perpetuate itself in the human body (Fülleborn) make it extremely difficult to eradicate. The worms are deeply embedded in the mucosa, although some are near the surface or free in the lumen of the upper small intestine. Most antihelminthic drugs are useless for the embedded worms, just as in the case of Trichina. It is probable that pathogenicity is proportional to mass of infection and general condition of the host. In the great majority of infested patients, Strongyloides does not produce symptoms. In the case under discussion, it is doubtful whether the worm had any relation to the symptomatology or pathologic changes. It is possible that the hemorrhoids and the anal condition may have resulted from anal invasion of developing larvae. If such was the case, eosinophilia and allergic bronchial or other symptoms might have been associated. The matter could have been settled only by examination of removed hemorrhoids or scrapings of fistulous tracts for larvae. In the absence of diarrhea, one must assume that otherwise the worms played no part in the pathologic condition and symptoms described.

The usual drugs are quite without effect on Strongyloides and the infestation has usually been considered incurable. If it should seem wise to treat the patient further for Strongylus, it would be advisable to use De Langen's combined method, giving antimony and potassium tartrate and gentian violet

V 10
1937

simultaneously. Gentian violet can be administered in doses of from 0.06 to 0.2 Gm. by mouth in pills freshly coated with melted phenyl salicylate three times daily for three to five days in each course. Antimony and potassium tartrate is given intravenously in 2 per cent solution in double distilled water, with care to have the solution perfectly clear. Injections should start with 1 cc. and be increased progressively to a maximum of 6 cc. and a total of twenty injections, given two or three times weekly. The urine should be watched and the treatment discontinued temporarily in case of reaction. The commoner reactions are shown by aching general pains, nausea and vomiting, or a cough. The entire combined procedure may be repeated after a few weeks intermission.

CHRONIC LUMBOSACRAL OR SACRO-ILIAC SPRAINS

To the Editor:—A married woman, aged 30, complains of lower back pain and stiffness in the region of the right sacro-iliac joint, radiating down the right leg to the ankle. There is no other joint pain or fever. The symptoms are of a year's duration and began shortly after a slight strain of the back due to a fall. General physical and serologic examinations are negative except for a deviated septum, large buried tonsils and a posterior drip. Reports of three orthopedic consultants are as follows: 1. Sacro-iliac sprain, x-ray examinations negative. 2. Tilt of the lumbar spine to the left, x-ray examination showing sacralization of the last lumbar vertebra with tilt of the fifth lumbar vertebra to the left. Impression is sciatic scoliosis secondary to a congenital anomaly, with osteo-arthritis of the lower part of the spine and the sacro-iliac joints. Immobilization advised in a double plaster spica followed by a spinal brace. If not relieved, a spinal fusion. 3. A lumbosacral angle of 28 degrees. The fifth lumbar vertebra displaced anteriorly on the first sacral. Tenderness over the right posterior iliac spine. Ober's test 1 plus bilateral. Impression is spondylolisthesis and a spine fusion, fourth lumbar to first sacral, advised. Please suggest further steps in diagnosis and treatment.

B. E. LANDESS, M.D., Ozone Park, N. Y.

ANSWER.—The symptom complex of chronic sciatic nerve pain associated with pain in the lower part of the back, coming on simultaneous to or immediately following an injury in which the back was subjected to acute or sudden strain, is compatible with a diagnosis of chronic lumbosacral or sacro-iliac sprain. The absence of any changes in the bones at the sacro-iliac joint that could be demonstrated in the roentgenogram, and absence of disability in the joints of the extremities, tend to rule out arthritis as an etiologic factor.

Associated with unilateral sacro-iliac pain there is commonly a protective muscle spasm, particularly of the sacrospinalis muscles, which produces a functional scoliosis such as that described for this patient. The sacralization of the last lumbar vertebra, described by one of the consultants, may have been a predisposing factor. Since only one of the three consultants diagnosed displacement of the fifth lumbar vertebra anteriorly on the first sacral, the definite presence of spondylolisthesis would seem not to have been adequately established. This point should certainly be settled, if necessary by taking additional lateral roentgenograms. The slightest rotation of the spine on taking the lateral film may cause a distortion of the shadows of the fifth lumbar and first sacral vertebrae, producing an erroneous impression of displacement. It would be necessary to demonstrate in the roentgenogram a defect in one or more of the pedicles in order to justify the diagnosis. Without having the opportunity of viewing the roentgenograms or of examining the patient to attempt to localize the lesion definitely, one would be presumptuous to advance any opinion. Before treatment is undertaken, organic neurologic lesions should be carefully ruled out.

Conservative measures of treatment should be carried out before operation is considered. Since Ober's test was reported as 1 plus bilateral, it would be advisable that the patient be given gas anesthesia and that both legs be manipulated according to the technic of the late Dr. William Baer. A double plaster spica cast should then be applied, including both legs and the feet and reaching well above the rib region on the trunk. A large window can be safely made over the abdomen. This adds to the comfort of the patient and prevents to some extent the abdominal distention which is so common following application of casts of this type. Immobilization in this cast should be continued for at least three weeks, and preferably for six weeks. A brace should be worn for at least six months if the patient remains free from symptoms. If, however, the patient continues to have pain after the second week in the plaster spica or if the pain returns later while she is wearing the back brace, a fusion operation should be considered.

Physical therapy, including exercises for strengthening the abdominal muscles and the gluteal muscles, should be used after removal of the cast. Permanent cures have been reported in from 75 to 90 per cent of all patients so treated.

IDIOSYNCRASY AND ASTHMA

To the Editor:—Kindly discuss the possibility of an idiosyncrasy to the medication in the following case: A woman, aged 74, weighing about 100 pounds (45 Kg.), always in good health except for symptoms of asthma to a moderate degree during the past several years, developed a slight cold. The cold had been present for two or three days, but the patient had been up and about her regular household duties. On the last day she had a cough and it was decided by members of the household that a medicine for the cough should be obtained. A bottle of cheracol was purchased with directions for one teaspoonful to be given every two hours. A dose of this was given at 7 p. m., and at about 8 o'clock the patient began to have severe dyspnea because of bronchial rales. She had been sitting reading the paper and visiting but asked to be placed in bed at this time. At about 8:10 the doctor was called. The patient was found profoundly dyspneic and cyanotic. She had a pulse rate of 120, which was regular and of good quality, and a temperature of 101.6. The coarse bronchial rales obscured other breath sounds and little was learned on percussion of the chest. There was slight abdominal distention. The patient frantically asked to be moved back to her chair. This was done. Steam inhalation with tincture of benzoin compound was started, and drops of dl-1-phenyl-2-aminopropanol-1-hydrochloride were instilled into the nostrils. The dyspnea was relieved almost immediately and the patient fell asleep in her chair. The doctor left. The patient requested that she be allowed to go to bed. At about 9 o'clock another teaspoonful of cheracol was given. At about 9:40 the doctor was hastily called again because of a recurrence of the former symptoms. On arriving, he found the patient in a semiconscious state with all the former symptoms and signs. An examination of the pulse showed a rate of 130. The pulse was strong and regular and continued to be so until about three minutes before her death, which occurred at 10:03. The sudden onset and cessation of symptoms in this case cause me to wonder about the possibilities of an idiosyncrasy to a drug in an asthmatic patient. Please omit name.

M.D., Wyoming.

ANSWER.—Cheracol is composed of the following ingredients to the ounce:

Potassium guaiacol sulfate	0.5	Gm.
Ammonium chloride	0.5	Gm.
Codeine phosphate	0.065	Gm.
Antimony and postassium tartrate	0.005	Gm.
Chloroform	0.12	cc.
Syrup of white pine and wild cherry	30	cc.

Codeine (0.008 Gm. to the teaspoonful) is the only likely drug in this formula that might produce an attack of asthma in a hypersensitive person. There are, however, strong objections to the likelihood of this in the history quoted. The age of the patient, 74, with a duration of asthma of only several years, is against the probability of the attacks being due to extrinsic causes. Moreover, it is improbable that a person of 74 should develop a new sensitivity to codeine. If such sensitivity had previously been present to such a common drug, the patient and the family would probably have been aware of it. The rapid relief obtained from the first attack of asthma described here by such simple measures as steam inhalation with compound tincture of benzoin and instillation of dl-1-phenyl-2-aminopropanol-1-hydrochloride into the nostrils is not characteristic of asthma due to a drug reaction. The reaction due to drugs is usually severe, prolonged and very difficult to control. The presence of fever is, moreover, much more characteristic of an infectious origin rather than a drug reaction, although a febrile reaction may occur as an unusual symptom of drug idiosyncrasy.

INTRAVENOUS EVIPAL FOR DENTAL SURGERY

To the Editor:—At times I am called in to give a general anesthetic for a dentist when he has a patient who so desires something rather than a local anesthetic. Would intravenous evipal bring about a complete enough anesthesia and muscular relaxation for a fifteen minute work period in the mouth? Would it be perfectly safe, and what are the contraindications if any? Please omit name.

M.D., North Dakota.

ANSWER.—The intravenous method of administering general anesthetics, although not exactly new, is not recommended for those who are inexperienced in the use of intravenous anesthetics. The method is not widely used and it has not been standardized. Sodium *n*-methyl-cyclohexenyl methyl malonyl urea (evipal) has not been accepted by the Council on Pharmacy and Chemistry. Some patients are fairly resistant to evipal and the amount of the drug necessary to produce anesthesia depends on whether or not the patient has had preliminary medication, which usually is not administered to dental patients. The use of the anesthetic agent is safer when the patient is lying on an operating table than when he is in a sitting position in a chair. The drug does not affect the pharyngeal reflex particularly, and when the patient is in the sitting position any blood or secretions in the mouth would tend to gravitate to the throat and produce coughing. One also would be faced with the possible danger of aspiration. It would be impossible to predict that the use of this drug in the instances mentioned could be said to be perfectly safe. Since the drug depresses respiration during and after the induction of surgical anesthesia, one

must avoid its use in cases in which pulmonary disease is associated with dyspnea and also in cases in which any respiratory obstruction exists or may occur during the operation or immediately afterward. Its administration to young children should be avoided because of marked depression of respiration and the very small respiratory passage through which the child must breathe.

If one wishes to use this drug in the cases mentioned, it would be well for one first to become experienced in its use in other types of cases and become familiar with actions of the drug. The intermittent method of injection should be employed. A quantity sufficient to produce anesthesia for the entire operation should not be injected at one time. There are many articles (from 350 to 400) on the subject available here and abroad. A few of these articles, which are rather easily available, are listed as references. If a medical library is not readily available, articles might be borrowed, or anesthetists of one's acquaintance would be glad to send reprints on the subject.

1. Council on Pharmacy and Chemistry: Evipal Soluble, THE JOURNAL, April 3, 1937, p. 1172.
2. Holman, Albert, and Mathieu, Albert: Intravenous Anesthesia with Evipal Soluble, *Am. J. Obst. & Gynec.* **30:** 118 (July) 1935.
3. Jarman, Ronald, and Abel, A. L.: Evipan as an Intravenous Anesthetic, *Current Res. Anesth. & Anal.* **14:** 54 (March-April) 1935.
4. Livingston, E. M.; Emy, Sabro, and Lieber, Hyman: Evipal Sodium: A Short Intravenous Anesthetic, *Am. J. Surg.* **26:** 516 (Dec.) 1934.
5. Sebening, Walter, and Beck, W. C.: Short Surgical Anesthesia with Intravenous Sodium Evipal, *Current Res. Anesth. & Anal.* **12:** 213 (Sept.-Oct.) 1933.
6. Trewick, J. A.: Evipan Sodium in Dental Anesthesia, *Dental Gaz.*, February 1936, p. 331.

TOXIC EFFECT OF CYANIDE USED IN CASE-HARDENING COMPOUND

To the Editor:—A man was brought to me who had inhaled concentrated fumes from "Kasenit," a case hardening chemical made by the Kasenit Company of New York. His condition was one of shock with pallid facies, rapid irregular pulse, and blood pressure 110 systolic, 60 diastolic. A severe bronchial irritation of the right lung especially was noted and coughing was continuous. The reflexes were negative. After two days rest the severe cough had subsided, but some moisture was noted in the right side of the chest; at no time was there any rise of temperature. The blood pressure rose to 190 systolic, 110 diastolic. The heart beat was irregular but no pulse deficit was present. The cardiac irregularity was improved to what it was when he was first seen. At this time he developed a weakness in the feet with severe pain in the legs and feet. The feet began to swell. After a few days the swelling decreased and the pain was very much less. He is now in the hospital and it has been ten days since he inhaled the fumes from the "Kasenit." The question has arisen as to whether or not the inhalation of the kasenit fumes caused or precipitated his condition or whether he simply had a heart attack.

J. A. MEASE JR., M.D., Dunedin, Fla.

ANSWER.—The firm mentioned is believed to manufacture a series of case-hardening compounds, chiefly of the open fire type, all of which are marketed under the general trade mark of "Kasenit." This being true, the reference to "Kasenit" in the query fails to identify any particular case-hardening substance. From the acuteness and the severity of the manifestations described, the tendency is to suspect that the case-hardening material in use was one of the cyanides, probably sodium cyanide. Cyanides constitute the chief case-hardening substance in many types of industry. The carelessness with which it is frequently used invites concern. However, the extent of practical hazard is distinctly lessened by the fact that, under the action of heat, cyanides are rather quickly changed into carbonates; thus much of the dust and fumes observable around case-hardening operations represents relatively harmless substances.

In this instance the manifestations described do not include any single characteristic feature of acute cyanide poisoning. In nonfatal cyanide poisoning the victim quickly develops convulsions, followed by a stage of multiple paralyses. During this period the respirations are slow and shallow. After the return of consciousness, prolonged vomiting frequently takes place. For a period of days or weeks there may be observed great weakness, unstable gait, speech difficulties and drowsiness, together with pains in various portions of the body, including headache. Whenever a person has ingested cyanogen compounds or inhaled concentrated vapors or gases to the point that convulsions take place, always there is a marked odor of hydrocyanic acid on the breath. Almost invariably this fact may serve in the making of a precise diagnosis.

In the absence of exact information as to the chemical nature of the case-hardening compound in use, and in the absence of clinical manifestations characteristic of the usual substances used in case-hardening, it becomes necessary to maintain for the time being that the episode described is probably the result of some cardiovascular accident not directly precipitated by any characteristic feature of employment. It is recognized that excessive heat, arduous labor and other circumstances connected with the work may have played some part in the precipitation of this attack. Even so, this must be recognized as not characteristic of this one particular occupation but as common to a great many.

DIAGNOSIS OF PRECORDIAL PAIN

To the Editor:—My mother, aged 65, has been complaining for the past year of "uneasiness around the epigastric region," "headache." Four months ago she started to complain of pain around both shoulders, radiating to the epigastric region and to the precordium; the duration was from half an hour to three quarters of an hour. Gradually the frequency and severity of the pain has increased and now she gets those attacks almost every day. The pain is not relieved by nitrites, as I have tried them on her. The attacks have no relation to effort, as she has been in bed for the past two months. The only thing that relieves her pain is one-half grain (0.03 Gm.) of codeine. Now she is out of bed but the fear of a coming attack makes her go to bed and stay there all day. She has a blood pressure of 164/110, the systolic fluctuating from 180 to 160 on different occasions, while the diastolic has been from 110 to 104. She complains of belching also and difficulty in swallowing. Urinalysis, blood chemistry and the blood count have been within normal range. The electrocardiographic record revealed myocardial damage in the slurring of QRS and in the abnormal ST intervals. Coronary involvement was suggested by the large Q_3. The PR interval was 0.16 second, the QRS complex 0.08 second and there was left axis deviation. In a roentgenogram of the chest the heart shadow appeared enlarged in the region of the left ventricle. The aorta appeared somewhat tortuous and increased in width and suggestive of atheromatous changes. A gastrointestinal series gave negative results. She has had a preparation of theobromine and phenobarbital 5 grains (0.3 Gm.) twice a day and carminatives. During the attack (I happened to witness two) there is no change in the blood pressure; she does not go into shock but sweats very slightly. How would you explain her difficulty on swallowing when there is no abnormality in the esophagus and what would you suggest in the line of therapy? Is the precordial pain due to cardiac fatigue (cardiac ischemia)? Please omit name and address if answered through THE JOURNAL.

M.D., California.

ANSWER.—A definite answer cannot be given. It is possible that the pain described is anginal in origin, even though it is not directly consequent on effort. Dysphagia is occasionally complained of in the presence of some abnormal cardiac condition causing pressure on the esophagus and occasionally in those suffering from anginal attacks, even when no pathologic condition can be demonstrated. In the latter case it is not so much a dysphagia as that the act of swallowing may bring on the anginal pain. The history given in this case, however, is not a convincing story of anginal attacks. The electrocardiographic observations are no more than might be concomitant with a heart normal for the age.

A hypertrophic osteo-arthritis must be considered, or some other anatomic change in the spine. The pain may be similar to that described here, and in the case of cervical arthritis the patient may designate pain radiating upward over the occiput as "headache." A spinal tumor must always be considered, even though improbable.

Disease of the gallbladder must be considered, even though the possibility appears somewhat remote.

If the pain is anginal in origin, one of the purine base diuretics may be used, and its use persisted in for a period of a few weeks, even if there is no improvement at first.

SIGNIFICANCE OF DICK TEST

To the Editor:—Will you please advise me as to the significance of the Dick test in an adult who required 90 skin test doses before a positive reaction was obtained. If this indicates an increased antitoxin content of the blood, what is the best and easiest method to titrate the antitoxin titer of the blood. In what conditions is this resistance to the Dick test seen? Kindly omit name.

M.D., New York.

ANSWER.—If the skin test solution is potent, which is probably the case if it is a commercial preparation, a patient who gives negative reactions to less than 90 skin test doses of toxin has a comparatively high degree of immunity to scarlet fever. Such higher degrees of immunity are commonly found in persons who have had an attack of scarlet fever complicated by otitis media and mastoiditis accompanied by a purulent discharge over a long period or other suppurative sequelae of scarlet fever. The correspondent already has titrated the antitoxin in the patient's blood. The skin test is a quantitative as well as a qualitative chemical test for scarlet fever antitoxin in the blood. To titrate the antitoxin by neutralization tests in vitro, collect blood from the patient by aseptic technic, allow it to clot in the icebox, collect the serum free from red cells, add 0.5 per cent phenol and make cultures appropriate for determining sterility. Make various dilutions in sterile physiologic solution of sodium chloride of the sterile serum and mix

V 10
1937

each dilution with an equal volume of sterile scarlet fever toxin which contains 10 skin test doses in each 0.1 cc. Make control solutions by mixing the various serum dilutions with equal volumes of sterile physiologic solution of sodium chloride and by mixing the toxin solution with an equal volume of sterile physiologic solution of sodium chloride.

After allowing the various mixtures to stand about one and one-half hours at room temperature, make skin tests on human beings known to be susceptible to scarlet fever, making in each individual three intradermal tests consisting of:

First, 0.1 cc. of the toxin control solution, which is the toxin diluted with an equal volume of physiologic solution of sodium chloride.

Second, 0.1 cc. of the toxin-antitoxin mixture, which is the toxin mixed with an equal volume of one of the dilutions of the serum to be tested.

Third, 0.1 cc. of the serum control, which is the dilution of the serum used in the second test mixed with an equal volume of physiologic solution of sodium chloride instead of scarlet fever toxin.

The reactions should be observed at the end of twenty-four hours. The reaction in the first test should be positive and in the third test negative. In the second test the reaction will be negative if the serum in the dilution tested contains sufficient antitoxin to neutralize 5 skin test doses of toxin. Most convalescent serums do not neutralize completely in dilutions of more than 1 in 10.

PARAMETRITIS OF BROAD LIGAMENT

To the Editor:—Since early in April 1936 a married woman, aged 27, has complained of pain in the lower part of the abdomen, most marked on the right side. The pain radiates into the back, especially the right sacro-iliac region. There are no associated gastro-intestinal symptoms. In January the patient contracted gonorrhea from her husband. Smears taken during March and April were negative for gram-negative intracellular diplococci. Physical examination by me and by a consultant revealed nothing of significance except in the pelvis, where moderate thickening and acute tenderness in the broad ligaments were noted. In view of this situation and a history of bilateral salpingo-oophorectomy done five years ago for "pus tubes" elsewhere, bed rest, sedation and long, hot potassium permanganate douches were advised. There was no improvement after four weeks. The Kahn test is negative. The urine (catheterized and voided) is normal except for diplococci in the stained sediment. Retrograde pyelograms were negative. Cystoscopy revealed a urethrocystitis. X-ray and physical examination of the lumbar and sacral regions revealed no abnormality other than a lumbar lordosis, which has increased gradually. During hospitalization, Elliott treatments were given and fluids forced to 4,000 cc. daily. No improvement has occurred. Is foreign protein therapy likely to offer anything in this instance? If so, what type would you advise? What other therapeutic measures, if any, might influence this inflammatory condition? Please omit name.

M.D., Michigan.

ANSWER.—The history suggests a chronic parametritis of the broad ligament, probably secondary to a chronic endocervicitis. There may be a thickening of the sacral-uterine ligaments. The focus of infection in the cervix should be eradicated in this patient by the Sturmdorf operation in perference to electrical coagulation. It is doubtful whether foreign protein therapy would be of any value here until surgical measures have been used. Such therapy might be helpful later, and sterile skim milk is satisfactory with an initial dose of 1 cc. intramuscularly, repeated twice weekly with gradually increasing amounts.

TREATMENT OF ACUTE CERVICAL ADENITIS

To the Editor:—What is the rational treatment of acute cervical adenitis today? Before suppuration, is heat or cold indicated for local application? Are the x-rays of proved value? Is the use of foreign protein or vaccine advised? In my experience these cases have been resistant to any form of treatment. The organisms found when suppuration occurs is usually a streptococcus. All these cases seem to follow a recent nasopharyngitis and are distinguished from infectious mononucleosis by the blood picture and the process being limited to the cervical glands. What treatment should be employed for cervical adenitis accompanying scarlet fever? Please omit name.

M.D., California.

ANSWER.—Almost any of the pyogenic bacteria involving the lymph drainage area may cause acute cervical adenitis, but there is no characteristic change due to any one organism. It may result from an acute process, usually in the nose, mouth or throat but occasionally in the sinuses or skin, with sudden onset and rapid swelling. Usually the swelling of the glands subsides in a few days or weeks. Only a few suppurate, most of them requiring to be drained after one or two weeks. Some gland abscesses lie deep in the neck, making the diagnosis of suppuration difficult. Cervical adenitis associated with scarlet fever, diphtheria and other epidemic diseases as influenza come under this group. Occasionally the source is only a nasopharyngitis with little local reaction.

Before suppuration, the usual treatment is dry heat. Occasionally moist heat is more soothing but it is more difficult to apply satisfactorily. The cervical adenitis may persist for some time without suppuration as a hard indurated process. Usually this gradually disappears without treatment. A similar hard brawny induration without suppuration occurs in association with a chronic infection in the drainage area such as root abscesses or sinus infection. The glands may either swell up suddenly as in the acute infectious diseases or develop gradually. Any pyogenic organisms may cause it, although the streptococcus has been found more frequently. One should be certain that suppuration deep in the neck is not overlooked and then attempt to clear up any foci of infection. The general immunity, which may be low, should be built up by any necessary medical treatment. If the etiologic organism can be determined, a vaccine may be helpful and no doubt a foreign protein may be of value occasionally; but caution in its use is advisable. Locally either moist or dry heat may be helpful.

X-ray treatments by a roentgenologist with very small exposures of approximately one-fourth erythema dose, smaller than in furunculosis or tuberculosis, have been found to stimulate the process and either aid absorption or hasten suppuration.

TREATMENT OF EXTRASYSTOLE OF HEART

To the Editor:—A man, aged 60, apparently in perfect health, with physical signs negative, complains only of one disturbance—extrasystole, or "the heart skipping a beat." I can find no pathologic or functional cause. Yet I fear he is developing into a cardiac cripple of neurotic type. Can you suggest anything better than psychology or advising a prolonged vacation? Please omit name.

M.D., Indiana.

ANSWER.—These are exceedingly difficult cases. The clinical importance of an occasional extrasystole is slight and one hesitates to advise medication, so by all means continue along the line suggested in the question.

Of all the drugs used to combat this situation, the salts of quinidine and quinine seem to have the most effect. A combination of quinidine sulfate and strychnine sulfate is credited with good effect, although it is difficult to see why this should be so. Is there bradycardia? Speeding up the pulse will often abolish the extrasystole. One must admit that this is bad therapeutics and carefully weigh the disadvantages of the use of cardiac accelerators. Occasionally it is found that coronary dilators will abolish this arrhythmia, even in those cases in which cardiac abnormality cannot be demonstrated. The use of theobromine or theophylline compounds is, at least, without danger.

Lastly, a general sedative will sometimes accomplish the result. Bromides or barbituric acid compounds may be used for this purpose, but again this is bad therapeutics and should not be lightly undertaken.

MORPHINE FOR PAIN IN MALIGNANT HYPERTENSION

To the Editor:—I have a sister, aged 35, with malignant hypertension. She has had this for five years. Her extremities, hands, arms and legs from the knees down show a loss of muscular tissue and the skin appears to be tightened about the bones. She has had circulatory disturbances through her legs during the past year and at the present time she has dry gangrene of two toes. About four months ago she had a cerebral hemorrhage leaving her paralyzed in her right arm and partially her right leg. The gangrene developed at that time. About a month ago she bumped her knee on a cradle and a large apparently trophic ulcer has developed on the knee where there was very little tissue between the skin and the bone, and it is for this reason I am writing to find out what the best management would be for alleviating pain and healing this ulcer, which is about the size of a quarter (24 mm.) and does not appear deep but continues to spread, becoming black and dry in the center, with a whitish gray border. Hot dressings cause rapid spread of the lesion. The blood pressure varies between 230/130 and 215/120. She has mild diabetes for which she is receiving insulin twice daily. Realizing what the ultimate outcome will be, I have sought in vain for some method other than morphine for the alleviation of pain. Any suggestion you may offer will be greatly appreciated. Please omit name.

M.D., Wisconsin.

ANSWER.—From the facts as given, the ultimate prognosis is dark. In view of the diabetes and the tendency for these necrotic lesions to spread, one feels that termination of this tragedy is not far off. Under these circumstances it appears that the judicious administration of morphine is fully justified. Morphine is still the most effective medication for the relief of pain. In the patient's extremely weakened state and with cerebral circulation impaired, small doses, starting with 0.008 Gm. (one-eighth grain), will probably suffice to bring comfort. Certain other methods of relieving pain, such as section of nerve roots or injection of alcohol into the nerve trunks, are obviously out of the question because of the risk of further gangrene. Aminopyrine and related compounds are probably more toxic than morphine.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 22-24. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, Sept. 13. Sec., Dr. W. W. Council, Box 561, Juneau.

ARIZONA: *Basic Science.* Tucson, June 15. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson. *Medical.* Phoenix, July 6-7. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: Little Rock, June 17-18. Sec., State Medical Board of the Arkansas Medical Society, Dr. A. S. Buchanan, Prescott.

CALIFORNIA: San Francisco, June 28-July 1, and Los Angeles, July 19-22. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 6. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: *Medical (Homeopathic).* Derby, July 12. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven. *Medical (Regular).* Hartford, July 13-14. *Endorsement.* Hartford, July 27. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DELAWARE: Dover, July 13-15. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 28-29. *Medical.* Washington, July 12-13. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Jacksonville, June 14-15. Sec., Dr. William M. Rowlett, Box 786, Tampa.

HAWAII: Honolulu, July 12-15. Sec., Dr. James A. Morgan, 48 Alexander Young Bldg., Honolulu.

IDAHO: Boise, Oct. 5. Commissioner of Law Enforcement, Hon. J. L. Balderston, 203 State House, Boise.

ILLINOIS: Chicago, June 22-25 and Oct. 19-21. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

INDIANA: Indianapolis, June 22-24. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, 301 State House, Indianapolis.

IOWA: *Basic Science.* Des Moines, July 13. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.

KANSAS: Topeka, June 15-16. Sec., Board of Medical Registration and Examination, Dr. H. Ewing, 609 Broadway, Larned.

MAINE: Augusta, July 6-7. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, June 15-18. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore.

MASSACHUSETTS: Boston, July 13-15. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MINNESOTA: Minneapolis, June 15-17. Sec., Dr. Julian F. DuBois, 350 St. Peter St., St. Paul.

MISSISSIPPI: Jackson, June 23-24. Asst. Sec., State Board of Health, Dr. R. S. Whitfield, Jackson.

MONTANA: Helena, Oct. 5-6. Sec., Dr. S. A. Cooney, 205 Power Block, Helena.

NEVADA: *Reciprocity.* Carson City, August 2. Sec., Dr. John E. Worden, Carson City.

NEW HAMPSHIRE: Concord, Sept. 9. Sec., Board of Registration in Medicine, Dr. Fred E. Clow, State House, Concord.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. Le Grand Ward, Sena Plaza, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OREGON: *Medical.* Portland, June 15-17. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland. *Basic Science.* Corvallis, July 17. Sec., State Board of Higher Education, Mr. Charles D. Byrne, University of Oregon, Eugene.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Board of Medical Education and Licensure, Dr. James A. Newpher, Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 7. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

RHODE ISLAND: Providence, July 1-2. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Rapid City, July 20-21. Director of Medical Licensure, Dr. B. A. Dyar, State Board of Health, Pierre.

TENNESSEE: Knoxville, Memphis and Nashville, June 17-18. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis.

TEXAS: Austin, June 21-23. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bldg., Dallas.

UTAH: Salt Lake City, June 21-23. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 16-18. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-19. Sec., Dr. J. W. Preston, 2815 Franklin Road, Roanoke.

WASHINGTON: *Basic Science.* Seattle, July 8-9. *Medical.* Seattle, July 12-14. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Fairmont, July 12. Sec., Public Health Council, Dr. Arthur E. McClue, State Capitol, Charleston.

WISCONSIN: Milwaukee, June 29-July 2. Sec., Dr. Henry J. Gramling, 2203 S. Layton Blvd., Milwaukee.

NATIONAL BOARD OF MEDICAL EXAMINERS SPECIAL BOARDS

Examinations of the *National Board of Medical Examiners and Special Boards* were published in THE JOURNAL, June 5, page 1994.

Illinois January Examinations

Mr. Homer J. Byrd, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held in Chicago, Jan. 26-28, 1937. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Sixty-three candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Chicago Medical School		(1936)	81, 82, 82, 83, (1937) 80, 81, 81,* 84, 86, 88
Loyola University School of Medicine		(1936)	85,* 87, 86, 88, 88, 90
Northwestern University Medical School		(1936)	85, (1934) 86, (1935) 89, (1936) 81, 82, 82, 82, 84, 85, 85, 86, 87, 87,* 88*
Rush Medical College		(1929)	83,
School of Medicine of the Division of the Biological Sciences		(1936)	83, 84*
University of Illinois College of Medicine		(1936)	81, 81, 82, 82, 83, 84, 84, 85, 85, 85,* 86, 86, 86,* 87, 87, 89, (1937) 87
University of Minnesota Medical School		(1928)	80
University of Manitoba Faculty of Medicine		(1935)	83
Queen's University Faculty of Medicine		(1929)	82
Medizinische Fakultat der Universitat Wien		(1935)	76†
Licentiate of the Royal College of Physicians of London and Member of the Royal College of Surgeons of England		(1935)	83‡
Friedrich-Wilhelms-Universität Medizinische Fakultat, Berlin		(1930)	83†
Julius-Maximilians-Universität Medizinische Fakultat, Würzburg		(1920)	81†
Ludwig-Maximilians-Universität Medizinische Fakultat, München		(1933)	86
Universität Heidelberg Medizinische Fakultat		(1910) (1911)	84†, 84†
University of Edinburgh Faculty of Medicine		(1922)	82

Twenty-six physicians were successful in the practical examination for reciprocity and endorsement applicants held in Chicago, January 28. The following schools were represented:

School	PASSED	Year Grad.	Reciprocity with
University of California Medical School		(1931)	California
Chicago College of Medicine and Surgery		(1917)	Wyoming
Northwestern University Medical School		(1934)	California
Rush Medical College		(1935)	New Jersey
Indiana University School of Medicine		(1928), (1935)*	Indiana
State University of Iowa College of Medicine		(1933)	Iowa
University of Kansas School of Medicine		(1934)	Kansas
University of Louisville School of Medicine		(1926)	W. Virginia
Johns Hopkins University School of Medicine		(1931)	Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons		(1924), (1934)	Maryland
University of Michigan Medical School		(1921)	Michigan
University of Minnesota Medical School		(1931)*	Kansas
St. Louis University School of Medicine		(1935)	Missouri
Washington University School of Medicine		(1930), (1933)	Missouri
Jefferson Medical College of Philadelphia		(1932)	Penna.
University of Pennsylvania School of Medicine		(1934)	Penna.
Woman's Medical College of Pennsylvania		(1928)	Penna.
Marquette University School of Medicine		(1929)	Wisconsin
Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest		(1914)	Wisconsin

School	PASSED	Year Grad.	Endorsement of
University of California Medical School		(1927)	N. B. M. Ex.
Yale University School of Medicine		(1934)	N. B. M. Ex.
School of Medicine of the Division of the Biological Sciences		(1933), (1934)	N. B. M. Ex.

* License has not been issued.
† Verification of graduation in process.
‡ Verification of graduation in process. License has not been issued.

Hawaii January Examination

Dr. James A. Morgan, secretary, Board of Medical Examiners, reports the oral and written examination held in Honolulu, Jan. 11-14, 1937. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Four candidates were examined, 3 of whom passed and one failed. One physician was licensed by endorsement after an oral examination. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Washington University School of Medicine		(1931)	82
Cornell University Medical College		(1932)	76
University of Sydney Medical School		(1924)	86

School	FAILED	Year Grad.	Per Cent
Licentiate of the Royal College of Physicians of London and Member of the Royal College of Surgeons of England		(1936)	70*

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Louisville School of Medicine		(1935)	N. B. M. Ex.

* Verification of graduation in process.

V 10
1937

Book Notices

Administrative Psychiatry. By William A. Bryan, M.D., Superintendent, Worcester State Hospital, Worcester, Mass. Cloth. Price, $3.50. Pp. 349. New York: W. W. Norton & Company, Inc., 1936.

The title of this book suggests that it is meant for the state hospital administrator and for him it could well become a "how book," dictionary and Bible. But to assume that its usableness and applicability is limited to psychiatrists in the administrative department of hospitals would be to overlook the most helpful presentation of hospital therapy and therapeutic management yet written. Every psychiatrist will find the book worth perusing, whether he is connected with an institution or not, but particularly for the institutional psychiatrist it can be an extremely valuable aid and guide. It contains many practical suggestions for all members of the hospital personnel—the business manager, the nursing staff, the therapists, the research members. Remarkable in the book is the point of view. The author is courageous and systematic. He is also progressive, as indicated in such opinions as that the autocratic executive in the hospital organization must give way to a creative leader, with the goal psychiatric rather than economic; the solution to the psychiatric nursing problem is the use of psychiatrically trained graduate nurses working an eight hour duty day; the staff and employees of the state institution should not be isolated from community life by being required to live on the hospital grounds; all group activity is a psychotherapy and should be so planned; occupational and industrial therapy is not therapy if it merely teaches a craft or is an economy for the hospital, and every psychiatric hospital should be a teaching center and carry on research work. Dr. Bryan is courageous because he recognizes that some state hospital psychiatrists will regard many of his suggestions with skepticism and think that they are either impracticable or impossible because of their idealism. But the author bluntly charges these hospital leaders with the responsibility for community leadership, legislative changes and psychiatric advance. The author is systematic. He approaches his subject from many angles. He gives many details and specific helps—rating charts for employees, division of responsibility for occupation, teaching outlines, letters to patients and relatives, clinic organization, responsibilities of social workers, and research protocols.

The chief criticism of the book is that it implies that psychiatry exists only in state hospitals. The author states that "psychiatry has become the function of the state." The scotoma for the private practitioner of psychiatry and the private psychiatric hospital is a serious flaw. Furthermore, one would infer from his book that psychiatry is applied only to the psychoses. Although he lauds the mental hygiene movement, is unusually progressive in his ideas regarding social workers, and mentions the importance of fostering contacts with ministers, lawyers and educators, he apparently does not consider these fields as being a part of an extramural psychiatry. Psychiatry is considered only in terms of mass care of the psychoses and the management of the individual with these illnesses. Other criticisms, briefly stated, are that the book is too short to give help in the management of the individual patient; that, while the author semiapologetically acknowledges his acceptance of the freudian concepts as being most helpful, no apparent application of them to treatment is suggested, and that most of the source references are used superficially and the consequent bibliography is of little use to the student who wants to go further than the author's own experience or ideas.

Death-Fighters. By Paul de Kruif and A. M. Smith. Paper. Pp. 39. Detroit, Michigan: Detroit News, 1936.

This pamphlet is a shocker. It bristles with such terms as "murder," "infamy," "slaughter," "mass murder," "imbecility" and "idiocy." It fastens on the father of a tuberculous family such terms as "mulishness" and accuses him of "if not killing his children with a shotgun, at least coughing them to death with TB microbes." The attitude of citizens at large toward tuberculosis is characterized as murderous complacency. The whole technic is that of shrieking murder for the purpose of attracting public attention. The reader might assume that the Detroit health department and the medical profession in Detroit had never before paid any attention to the tuberculosis problem and that no attention had been paid to it elsewhere. The thirty years' fight that has been carried on throughout the country is ignored or minimized as if it had done nothing. Acknowledging the many excellent features of the Detroit plan for fighting tuberculosis, out of which this pamphlet grows, one cannot escape the conviction that the pamphlet is its least desirable feature. Calm consideration should convince any experienced worker in public health that shrieking murder may be an excellent way to attract attention and achieve a brief flare of publicity, but it is not the way to make sustained progress. Moreover, it is unfair to the equally earnest but less spectacular toilers in other fields to intimate that in Detroit and in Detroit alone a public conscience has been shown that will result in the eradication of tuberculosis. Finally, the pamphlet leaves the implication that tuberculosis can be overcome quickly. This is not true. The fight must be a long one. Neither individual nor community can be kept forever at a high pitch of enthusiasm. The greater the action, the greater the reaction.

Técnicas de laboratorio clínico. Por Fernando de la Fuente Hita, jefe de laboratorio del dispensario antituberculoso de Buenavista y del hospital de asistencia social. Paper. Price, 5 pesetas. Pp. 123, with illustrations. Madrid: Gráficas Sánchez, 1936.

This book reviews laboratory tests. The technics discussed by the author are given in the form of articles, most of which were published by the author as original articles in Spanish medical journals from 1928 to 1933. The book includes the following articles: 1. A modification of Volhard's method for quantitative determination of chlorides in urine. The modification consists in replacing nitric acid with an acetic acid solution (for destruction of organic matter in the urine) and in titrating the excess of silver nitrate (after precipitation of the chlorides has taken place) with a known solution of sodium chloride in the presence of yellow potassium chromate as indicator. 2. The technic of the Vernes perethynol test for the diagnosis of syphilis, as it is performed at the Institut prophylactique of Paris. Also a study of the sensitivity of the test and, in this connection, indications of advisability of verifying the results of the test by rereading the results twenty-four hours after the test has been made. 3. Micromethod for quantitative determination of dextrose in the blood. The method is based on Myers and Baley's macromethod, which in turn is a modification of the Lewis-Benedict method for dextrose. 4. Technic, diagnostic and prognostic value of the Vernes resorcinol test for tuberculosis. 5. Technic for deviation of the complement by using the patient's active blood serum. 6. Technic for determination of hemolysins in cerebrospinal fluid in investigating meningeal permeability. 7. Technic and results of the Vernes photometric interpretation of the third Kahn sero-albumin test for the diagnosis of cancer. 8. Technic for evaluation of pyuria and prognostic value of the test in infections of the urinary tract. 9. New quotient for velocity of sedimentation test (Fahraeus's reaction). 10. Weltmann's simplified serocoagulation test. 11. Description of Kovarski's modified microureometer and technic. 12. Review of Borowskaja's method for preparation of colloidal gold solutions and Fuente-Hita's technic for the same purpose. Many of the articles published are six and eight years old.

The Extra Pharmacopoia (Martindale). Volume I. Published by direction of the Council of the Pharmaceutical Society of Great Britain. In two volumes. Twenty-first edition. Cloth. Price, 27s. 6d. Pp. 1,182. London: Pharmaceutical Press, 1936.

The first edition of Martindale's Extra Pharmacopeia appeared in 1883 and since 1912 it has appeared in two volumes. Volume I is devoted mainly to treatment with drugs and chemicals. Volume II, which has always been less popular, is concerned with matters of diagnosis, analysis, assay and "divers subjects—which could not be included in the first volume." It is an extensive compendium of therapeutic agents employed in England and the British Empire. There is no exact counterpart published in this country. It deals primarily with the preparations found in the British Pharmacopeia and the British Pharmaceutical Codex but differs essentially from the latter in not being an official publication in any sense of the word.

Therapeutic description of each item consists in most cases of a preliminary paragraph followed by brief excerpts from the current literature. Preparations are designated as being included in various English formularies or in the official pharmacopeias of other nations. It is noted, therefore, that no preparation is indicated as being an N. F. or N. N. R. item. Frequent reference is made to articles that have appeared in THE JOURNAL and direct quotations from reports of the official councils of the American Medical Association are made in connection with cevitamic acid (Acidum Ascorbicum B. P. Add.); the claims for vitamins A, B_1 and D; the standardization of liver preparations; the Council's selection of the word "ergonovine" for use in N. N. R.; the reports of the Advisory Committee on Nomenclature of Endocrine Principles and the series of articles that comprise Glandular Physiology and Therapy. On the other hand, the volume can hardly be considered (or expected to be) an adequate guide for the critical evaluation of the almost endless number of therapeutic preparations that are listed. This edition is thoroughly abreast of the times and includes preparations that have recently been added to the British and U. S. pharmacopeias as well as the newer remedies reported in the medical literature. The volume represents an enormous amount of work, and the extensive listing of the names of the drugs alone is of value. The book has a comprehensive index containing approximately 11,000 entries and follows the general style of previous editions. It should be welcomed by those who have found the preceding volumes useful.

History of Chinese Medicine: Being a Chronicle of Medical Happenings in China from Ancient Times to the Present Period. By K. Chimin Wong, Licentiate of Medicine and Surgery, Hongkong, and Wu Lien-Teh, M.A., M.D., Dr.M.Sc., Director, National Quarantine Service. Second edition. Cloth. Pp. 966, with 38 illustrations. Shanghai, China: National Quarantine Service, 1936.

A review of the first edition was published in THE JOURNAL, July 1, 1933. That a second edition was forthcoming about four years later attests the fact that the history of Chinese medicine is a fascinating story. The volume comprises two distinct books: Book one, by Dr. K. C. Wong, lecturer on medical history at the National University in Shanghai, deals with the history of the indigenous art from the earliest recorded period to the close of the eighteenth century; and book two, by Dr. Wu Lien-teh, director of the Manchurian Plague Prevention Service, treats of the last 130 years, the period since the introduction into China of Western medicine by the foreign missionaries. Book one is the smaller for two reasons: (1) there are many difficulties inherent in the collection of records of medical discoveries during the very early centuries covered by the first book and (2) medical progress in China came to a standstill long before the close of the seventeenth century and remained so throughout the fruitful years following Harvey's discovery of the circulation of the blood; it was resuscitated only when the medical missions came to China. In the second edition, some new chapters have been added and several others have been rewritten. Book one now contains twenty-six chapters instead of twenty-one. The chapters on ancient drugs, decline of the native practice, and prominent practitioners of the Ching dynasty, are among the new chapters. In book two, a chapter on the consolidation of medical work under government auspices in the last eight years has been added. The crowning feat of public health work in China during this period (1928-1936) was the establishment of a ministry of health under the national government in Nanking. The ministry of health has advanced rapidly toward a modern public health program, establishing school health service, which was extended to fifty municipal schools; child and maternity health measures, including the training of native midwives; health education through posters, pamphlets and a monthly magazine; public health nursing, and an industrial health program. In 1930 a Peiping committee on maternal health was established and the first birth control clinic was opened under the auspices of this committee in the same year. On account of the need of modern doctors, a program was also laid out for the establishment of medical schools in each of the provinces, the standards of which were to be the consideration of a committee established jointly by the ministers of education and health. Among other councils under the ministry of health were the Council on Research, the council on publication, the council on medical missions, and steps were being taken for the formation of a council on pharmacy and chemistry. The Chinese Pharmacopeia, based largely on the Pharmacopeia of the United States, Japan, Great Britain and Germany, was adopted in 1930.

The Social Component in Medical Care: A Study of One Hundred Cases from the Presbyterian Hospital in the City of New York. By Janet Thornton, Director, Social Service Department. In collaboration with Marjorie Strauss Knauth, Assistant Physician, Department of Medicine. Cloth. Price, $3. Pp. 411. New York: Columbia University Press, 1937.

One hundred patients of the Presbyterian Hospital in New York were studied in detail by physicians and social workers. The purpose was "to discover and describe the social disorders of a certain number of patients and to determine whether the patients' reactions to such disorders were unfavorable to health." The cases are divided into acute, recurrent and chronic. The adverse social factors associated with individual problems of ill health include subsistence, economic protection and faulty personal habits. Measures were undertaken to remedy these unfavorable social factors through control of the environment, supplying deficiencies in evironment, helping the patient to utilize available resources, removing obstacles to care, and moving the patient to a more favorable environment. To influence conduct, dependence was placed on explanations, elucidations and demonstrations. An effort was also made to foster more healthful habits. Such treatment required extensive personal attention to each patient. Because only a small percentage of the patients were indigents or in the extremely low income classes, some of the most common economic factors had little importance. Financial factors were not found to interfere with the securing of medical care. There were few cases in which shelter or food were deficient. Labor, although sometimes apparently excessive, was found in several cases to be a help rather than a hindrance to recovery. One clearly essential factor of such work is a close, sympathetic relation with and long time, personal effort by a physician in cooperation with medical social service workers. Such treatment would manifestly be impossible under any system of sickness insurance in which close personal relations were not assured.

Les lésions organiques du cœur: Étude clinique, anatomique et thérapeutique. Par R. Lutembacher. Cloth. Price, 300 francs. Pp. 351, with 185 illustrations. Paris: Masson & Cie, 1936.

The purpose of the author is clearly stated in the introduction. He recognizes the rather schematic conception of disease that results from didactic teaching with the embarrassing confusion that follows when the student and practitioner are confronted with the concrete facts of daily practice. "Clinical teaching controlled by necropsy is the indispensable complement of theoretical instruction." This work, the result of twenty years of practical experience with the diseases of the heart, is issued as a contribution to such clinical teaching. The book is really an atlas of 185 illustrations from photographs of hearts found at necropsy. The publishers are justified in praising these not only as faithful reproductions of the anatomic specimens but also as examples of photography that is highly artistic. With the aid of small guide-diagrams and the legends one is easily able to identify the various parts of the organ. Brief clinical histories and abstracts of the other conditions found at the necropsy are furnished. Around these illustrations has been built a descriptive outline of certain types of heart disease, such as the inflammations, valvular lesions, disorders of the coronary artery, and aneurysm, with some consideration of diagnosis and treatment. The latter feature is occasionally rather overemphasized, with intravenous medication too frequently advocated. This skeleton text may help make the book of worth to the practitioner but the real value, as has been said, lies in the illustrations. The author, already well known in cardiology as an appended list of some hundred of his articles attests, has really added to his reputation by this fine volume, which is the result of patient collecting of these histories and anatomic specimens that has enabled him to present in an attractive and instructive form this unusual book. The publisher's work has been excellently done. The remarkably clear illustrations are of natural size. Type, paper, margins are all that could be desired. The pages measure 25 by 32 centimeters.

V 10
1937

Oral Diagnosis and Treatment Planning: A Textbook for Students and Practitioners of Dentistry and Medicine. Edited by Samuel Charles Miller, D.D.S., Associate Professor in Charge of Periodontia Department, New York University College of Dentistry. With an Introduction by Allen T. Newman, M.S., D.D.S., Dean, New York University College of Dentistry. Cloth. Price, $7.50. Pp. 620, with 562 illustrations. Philadelphia: P. Blakiston's Son & Co., Inc., 1936.

This is intended primarily as a text and reference book for dental students, though it is of equal interest and value to practitioners of both dentistry and medicine. It represents the trend in dental literature and education to extend the attention from the teeth and their immediate supporting tissues to the oral cavity and all the conditions manifested in the mouth and associated parts. It especially emphasizes the relation between oral and systemic conditions and tends to break down the lines of demarcation between dentistry and medicine. The chapters treat such subjects as oral diagnosis, head pain and pain of dental origin, mouth conditions in children, radiographic diagnosis, abnormalities of the temporomandibular articulation, tumors of the oral mucous membrane, mouth infections and their relation to systemic disease, and oral manifestations of endocrine dysfunctions. There is an interesting chapter on oral and dental diseases of occupational origin. While this is necessarily sketchy, it is interesting and valuable for reference. Such books are extremely valuable but tend of course to be somewhat superficial. They cannot be a substitute for a thorough knowledge of pathology. The chief criticism that might be made of the book is that it is a mixture of pathology, clinical diagnosis and dental technical procedure; but, in a field so comparatively new, satisfactory form and organization can be arrived at only by experience and experimentation. The book is profusely illustrated both in black and white and in color, and most of the illustrations are well reproduced. Naturally there are statements that might be questioned. Many practitioners may find it a valuable book of reference.

Control of Animal Parasites: General Principles and Their Application. By Maurice C. Hall, Ph.D., D.Sc., D.V.M. Cloth. Price, $2. Pp. 162, with illustrations. Evanston, Illinois: North American Veterinarian, 1936.

This is a book of biologic strategy, a phase of scientific activity all too little developed in both instruction and practice in applied biology and medicine. The author treats, as a problem of attack along the lines of well established military principles, the control of parasites in domesticated animals and in man in instances, such as trichinosis, in which man is or may be involved as one of the facultative or obligatory hosts. Diagrams present in visual form all the factors involved in the problems of control. Life histories are lines of communication between infested and susceptible host animals. The weapons available for direct attack on the parasite, on its lines of communication and on its reservoir hosts are brought out of the arsenal. Such a presentation is especially valuable to the physician and the veterinarian in showing the part each of these plays in the campaign for the relief of his patients and the protection of his clientele from infection. It also affords a point of view not elsewhere adequately and so dramatically presented of great value in instruction in parasitology and in public health. Specific examples in the medical fields are the plans of campaign against yellow fever, malaria, trichinosis, beef and pork tapeworms, dog fleas, pinworms, hookworms, and hydatid disease.

Pathologie der Functionen und Regulationen. Von Prof. Dr. L. Lichtwitz, Chef der medizinischen Abteilung des Montefiore Hospital, New York City. Paper. Price, 13.25 florins. Pp. 332, with 125 illustrations. Leiden: A. W. Sijthoff's Uitgeversmaatschappij N. V., 1936.

This embraces not only recent advances in medicine but a point of view developed by the author which is provocative and enlightening. His main thesis is that there exists a neurohormonal regulatory mechanism in the diencephalic hypophysial region which governs function generally. A pointed example is the thyroid gland. Normally the vegetative center in the diencephalon activates the formation of thyrotropic hormone in the hypophysis, which in turn stimulates the thyroid gland to the formation of thyroxine. The latter acts on the diencephalic center in a negative way, preventing overstimulation of the hypophysis until an equilibrium is established. Thus the pathogenesis of disease as well as the other diseases discussed must be considered in a new light, as should the methods of treatment. Similarly the author takes up the various diseases as affecting systems rather than a single organ. In addition to his discussion of the glands of internal secretion and the pathology of their functions, the author stresses the important rôle of the diencephalic hypophyseal complex in the pathogenesis of immunity, rheumatic fever, arthritis, gout, blood dyscrasias, hypertension, nephritis and nephrosis. Although much of the material presented is gathered from the literature, a large percentage is from the author's personal clinical, chemical and pathologic experience. There are numerous case histories, reproductions of photographs of patients, and roentgenograms, as well as graphs representing various tolerance tests and chemical analyses. Unfortunately, many of the inferences were drawn from the finding of a central lesion in association with a peripheral one, implying that the former pathologic condition predisposed to the latter. Similarly the central action of drugs was considered as proof presupposing that the drug would not act peripherally, but the author answers this criticism in his preface, stating that although this book was written in the spirit of optimism and skepticism new ideas were not only presented without fear but encouraged. Because of its wide scope, this publication should prove stimulating to specialists in all branches of medicine.

Milk and Milk Products Prepared for the Use of Agricultural College Students. By Clarence Henry Eckles, D.Sc., Willes Barnes Combs, M.A., Professor of Dairy Husbandry, University of Minnesota, and Harold Macy, Ph.D., Professor of Dairy Bacteriology, University of Minnesota. Second edition. Cloth. Price, $3.50. Pp. 386, with 92 illustrations. New York & London: McGraw-Hill Book Company, Inc., 1936.

The second edition of this welcome textbook on milk and milk products continues the reputation earned by the earlier edition. The book is primarily designed as a textbook for students in agricultural colleges; it therefore contains much material that could well be omitted for medical readers. Despite this duplication, which is necessary to preserve the functions for which the book is intended, the volume affords a mass of information on milk and dairy products that will interest the physician and the general reader. There are chapters touching on common dairy processes, the manufacture of butter, cheese and ice cream, and the methods of preparing evaporated milk and dry milk. There is no mention in the book of curd tension and methods of determining this property, nor is there any discussion of milk that has been treated to modify the curd.

Hígado, vías biliares y páncreas. Por el Doctor Marcelo Royer, jefe de la sección gastro-enterología del Instituto de Semiología. Paper. Pp. 132, with 49 illustrations. Buenos Aires: "El Ateneo" Librería científica y literaria, 1936.

Royer's book contains nineteen chapters in which the symptomatology of liver, biliary and pancreatic diseases and the several methods of examination of these structures are described. Certain methods and maneuvers for palpation in liver and biliary diseases are shown by illustrations. The diagnostic value of the methods of palpation to which the author refers is discussed. The aspect of the abdomen in certain conditions of the pancreas is shown by illustrations. The diagnostic significance of several roentgenograms of the liver, the biliary tract and the pancreas, which were taken in several aspects by the indirect and direct methods of visualization of the structures and which are shown in the book, is discussed in detail. Modern technics for roentgen examination of the biliary tract are given in detail and the diagnostic value of the technics is discussed. Functional tests for the liver, tests for biliary and hepatic secretions and functional tests for the pancreas are covered. The illustrations are clear.

Nutritive and Therapeutic Values of the Banana: A Digest of Scientific Literature. Paper. Pp. 143. Boston: Research Department, United Fruit Company, 1936.

The Research Department of the United Fruit Company has scoured the literature of scientific and clinical articles on the use of the banana as a food. The present volume is a compilation of 292 abstracts listed alphabetically according to authors. There is a subject index but no author index.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Practice of Dentistry Under Assumed Name Unlawful.—The dental practice act of Michigan forbids the practice of dentistry under any false or assumed name, or under the name of a corporation, company, association, parlor or trade name, or any name other than that under which the license of the practitioner was granted. The state board of dentistry served written notice on a number of dentists informing them that on and after a certain date the prohibitions contained in the dental practice act would be enforced. The plaintiffs in the present action, all licensed dentists, instituted proceedings to enjoin the board from interfering with their practice. The trial court dismissed the plaintiffs' bill of complaint and they appealed to the Supreme Court of Michigan.

The bill of complaint disclosed that plaintiff Raymond H. Dix conducted five dental offices in Michigan under the name of "Dr. Dix Dentists." Five other plaintiffs used substantially the same modification of their respective names. Plaintiff Treverton E. Lewis practiced dentistry under the title of "Peerless Dentists." Plaintiff William G. Zieve operated four dental offices under the style of "Dr. Zieve's Modern Dentists." The business of plaintiff J. Bain McGilvray was carried on under the name of "Red Cross Dentists," and that of plaintiff Gordon B. Sullivan under the name of "Dr. G. B. Sullivan's Practical Dentists." The plaintiffs contended that the dental practice act, if it prohibited them from practicing dentistry under the titles they used, was unconstitutional. The legislature, said the Supreme Court, in enacting the dental practice act, undertook to provide conditions essential to regulation, to prevent deception, and to require a definite and accurate announcement to the interested public as to the individual identity of each dentist who was practicing in a dental office. To accomplish this end, it prohibited the practice of dentistry by any person "under any name other than that under which his license was granted." Such a prohibition does not impose on those practicing dentistry a regulation that is either arbitrary or unreasonable. The provision is reasonably suited to the requirement of proper supervision of the practice of dentistry. It also provides prospective patients with pertinent information. Clearly, the court thought, it is both competent and proper that the legislature should forbid the practice of dentistry under an assumed or fictitious name, such as "Peerless Dentists," "Red Cross Dentists," "Dr. G. B. Sullivan's Practical Dentists," and "Dr. Zieve's Modern Dentists." The court could see no hardship or anything that was arbitrary or unreasonable in requiring a person engaged in the practice of dentistry to include in the name under which he carries on his profession the identical name under which he was licensed to practice. The legislature further prohibited the use of any word or words as a part of the business name which are either "false" or "assumed." In the opinion of the court, it would be too narrow a construction of legislative intent to hold that the use of a name, otherwise conforming to statutory requirement, was violative of the act because it had affixed thereto some such word as "dentists," "associates," "employees," or the like. The appended word or words, in such a case, would not convey a false impression or mislead the public. It would not be contended, the court said, that John Doe, a dentist, might not in his practice use the business title "John Doe, Dentist." If he employed other dentists in his office, a sign reading "John Doe, Dentists" would tend to accuracy and be informative rather than deceptive. If John Doe desired to convey to the public that other dentists in his office were his employees and hence under his control as to quality of service, etc., he might well carry on his profession as "John Doe's Dentists." Such a designation speaks the truth. It is not a false or assumed name, nor a "parlor or trade name"; it accurately discloses the full name under which John Doe was granted his license.

The court disagreed with the plaintiffs' contention that they had a vested right in their respective business titles, accrued to them from a long established professional business and the expenditure of large sums of money in its development. A dentist enters on the practice of his profession, the court pointed out, knowing it is subject to reasonable regulation by the state. He has no right to use, or by reference to continue to make use of, a type of business title which in its exercise of reasonable regulation the state has forbidden. The Supreme Court disagreed with the board's contention that a court of equity has no jurisdiction to grant the injunctive relief sought by the plaintiffs, that each of the plaintiffs had an adequate remedy at law by urging as a defense his contentions in event of legal proceedings being instituted against him. The situation with which the plaintiffs were confronted, in the opinion of the court, threatened them with irreparable injury and a court of equity had jurisdiction.

With respect to some of the plaintiffs, the court could not determine from the record whether or not the names under which they were carrying on their profession complied with the requirements of the dental practice act. In view of this uncertainty, the court remanded the case to the trial court, with directions to set aside the order dismissing the bill of complaint and to take such further proceedings as might be requisite for a final disposition of the cause.—*Lewis v. Michigan State Board of Dentistry (Mich.), 269 N. W. 194.*

Tic Douloureux Attributed to Trauma.—The plaintiff fell from a loading chute on a gravel car when one of the pipes which supported it was struck by a passing freight train belonging to the defendant railway company. Among other injuries, he sustained a bruise on one cheek. Subsequently, he suffered intense pain in the side of the face that had been bruised and a diagnosis of tic douloureux was made. Eventually the plaintiff sued the railway company to recover damages for his injuries. The trial court entered judgment for the plaintiff for $2,000 and the railway company appealed to the court of civil appeals of Texas, Austin.

According to the medical testimony, said the court, tic douloureux is an affection of one of the facial nerves, incurable except by an operation which would result in paralysis of the side of the face and permanent injury to the eye. The medical testimony was conflicting as to whether the tic douloureux was the result of the plaintiff's injuries received from the fall. One physician testified that the medical profession generally was unable to ascribe any cause for tic douloureux. Two other physicians were of the opinion that it could be caused by a blow such as the plaintiff had received and the jury, said the court, evidently accepted the testimony of these two witnesses. The amount of damages awarded, $2,000, was in the opinion of the court a moderate compensatory award for the plaintiff's pain and suffering, past and prospective. The judgment in favor of the plaintiff was affirmed.—*Texas & N. O. Ry. Co. v. New (Texas), 95 S. W. (2d) 170.*

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Detroit, June 14-16. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Secretary.

American Association for the Study of Neoplastic Diseases, Baltimore, June 24-25. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N. W., Washington, D. C., Secretary.

American Association of Genito-Urinary Surgeons, Quebec, Canada, June 14-16. Dr. Henry L. Sanford, 1621 Euclid Ave., Cleveland, Secretary.

American Physiotherapy Association, St. Paul, June 27-July 1. Miss Jefferson I. Brown, Tichenor Hospital School, Long Beach, Calif., Secretary.

American Urological Association, Minneapolis, June 29-July 1. Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn., Secretary.

Maine Medical Association, Belgrade Lake, June 20-23. Miss Rebekah Gardner, 22 Arsenal St., Portland, Secretary.

Montana, Medical Association of, Great Falls, July 13-14. Dr. Thomas L. Hawkins, 50 North Main St., Helena, Secretary.

Pacific Northwest Medical Association, Great Falls, Mont., July 8-10. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Rocky Mountain Medical Conference, Denver, July 19-21. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver, Secretary.

Vancouver Medical Association Summer School, Vancouver, B. C., June 22-25. Dr. J. R. Naden, 203 Medical-Dental Bldg., Vancouver, Secretary.

V 10
1937

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

193: 449-580 (April) 1937

Studies of Blood Formation in the Fetus and the New-Born: III. Relation of Antianemic Principle: Assay of Fetal Liver and Placental Extracts in Cases of Pernicious Anemia and in Mosquito Larvae. M. M. Wintrobe, Baltimore; with assistance of R. E. Kinsey, R. C. Bloomt, Baltimore, and W. Trager, Princeton, N. J.—p. 449.
Quantitative Cytologic Study of Bone Marrow of Adult Dog. J. Stasney and G. M. Higgins, Rochester, Minn.—p. 462.
Blood Picture Before and After Fever Therapy by Physical Means. F. H. Krusen, Rochester, Minn.—p. 470.
*Plasma Prothrombin Level in Normal Infancy and in Hemorrhagic Disease of the New-Born. K. M. Brinkhous, H. P. Smith and E. D. Warner, Iowa City.—p. 475.
Autopsy Incidence of Cholelithiasis: Based on Records of Institute of Pathology, Western Reserve University and University Hospitals, Cleveland, Ohio. A. I. Ludlow, Seoul, Korea.—p. 481.
Studies of Gallbladder Function: XIV. Absorption of Sodium Tetraiodophenolphthalein from Normal and Damaged Gallbladder. J. Johnson, A. L. Ellis and Cecilia Riegel, Philadelphia.—p. 483.
Study of Osseous Remains of "Mound Builders" of Eastern Arkansas. E. G. Wakefield, Rochester, Minn.; S. C. Dellinger, Fayetteville, Ark., and J. D. Camp, Rochester, Minn.—p. 488.
Experimental Radium Poisoning: II. Changes in Teeth of Rabbits Produced by Oral Administration of Radium Sulfate. M. Rosenthal, Brooklyn.—p. 495.
Gastric Acidity in Alcohol Addicts, with Observations on Relation of B Vitamins to Achlorhydria. P. M. Joffe and N. Jolliffe, New York.—p. 501.
Roentgenographic Studies of Mucous Membrane of Colon: III. Mucosal Detail Studies as an Aid in Early Recognition of Carcinoma of Colon. H. G. Jacobi and F. J. Lust, New York.—p. 510.
Tuberculous Tracheobronchitis: Its Pathogenesis. J. C. Bugher, J. Littig and J. Culp, Ann Arbor, Mich.—p. 515.
Observations on Use of Carbon Dioxide in Early Pneumonia. L. Gunther and H. H. Blond, Los Angeles.—p. 525.
*Inadequate Treatment of Early Syphilis: Clinical Results in 409 Patients. P. D. Rosahn, New Haven, Conn.—p. 534.
Experimental Study of Variations in Production of Visual Disturbance by Certain New Cinchona Derivatives. W. T. Dawson, Galveston, Texas; H. H. Permar, J. M. Johnston and W. W. G. Maclachlan, Pittsburgh.—p. 543.
Somatic Phenomena in Psychoneuroses. J. M. Flynn, Boston.—p. 548.

Plasma Prothrombin in Normal Infancy and in Hemorrhagic Disease.—Brinkhous and his associates studied the plasma prothrombin level in a number of pregnant women and found no significant deviation from that of nonpregnant women. Two cases studied shortly before delivery showed values of 100 and 93 per cent of the nonpregnant control. Three, each taken a few minutes after delivery, were 110, 99 and 98 per cent. It is evident that the fetal prothrombin level lacks the stability of that of the mother and that the two levels are not related in any simple way. The plasma prothrombin level in infancy was studied with the aid of a quantitative titration procedure. The level in normal new-born babies varies in this series between 14 and 39 per cent of the level found in normal adult plasma. The prothrombin level rises gradually during subsequent months and reaches the adult level at the end of about a year. After the first few weeks of life the individual cases show little deviation from the curve plotted through the entire group. A case of hemorrhagic disease of the new-born showed the plasma prothrombin to be less than 5 per cent of normal adult values. The antithrombic activity of the plasma was somewhat excessive, but the plasma fibrin was normal. Intravenous transfusion of blood resulted in prompt cessation of bleeding. The plasma prothrombin studied ten and forty-four days later was found to be up to the normal values for infants of that age.

Inadequate Treatment of Early Syphilis.—Rosahn discusses the outcome in 409 patients who had received early inadequate treatment for syphilis. With regard to the diagnosis when treatment was begun, the highest proportion of satisfactory results (no evidence of syphilis as determined by clinical, serologic and spinal fluid tests one year or more after the last treatment) was noted in the seronegative primary stage. A significantly higher incidence of satisfactory results was observed among patients who had received continuous treatment than in those treated by other systems. The least successful treatment was in patients receiving less than fifteen injections of a trivalent preparation and ten injections of bismuth or mercury compounds. It was best in those treated with these amounts or more. Syphilis of the central nervous system comprised the largest proportion of late relapses. Wassermann recurrent late syphilis had a slightly lower incidence and cardiovascular syphilis still lower. Early infectious relapse and late benign and visceral syphilis had an equal and also the lowest incidence. The 134 patients with a satisfactory result were followed for from one to thirty years after the last treatment; 117 of these had been observed for periods longer than two years after the cessation of specific medication. The most serious danger confronting these patients was the possibility of subsequently developing cardiovascular recurrence. Although inadequate treatment does produce a certain proportion of successful results, adequate treatment schemes as recommended by the Cooperative Clinical Group and by the Health Organization of the League of Nations should be rigorously followed in the management of early syphilis.

American Journal of Ophthalmology, St. Louis

20: 347-456 (April) 1937

Leiomyoma of the Iris: Report of Case. A. D. Frost, Columbus, Ohio.—p. 347.
Studies on Infectivity of Trachoma: V. Purification of Infectious Agent by Testicular Passage. L. A. Julianelle and R. W. Harrison, St. Louis.—p. 353.
Id.: VI. Cultivability of Infectious Agent in Tissue Cultures. R. W. Harrison and L. A. Julianelle, St. Louis.—p. 360.
Plexiform Neurofibromatosis (von Recklinghausen's Disease) Involving Choroid, Ciliary Body and Other Structures. J. M. Wheeler, New York.—p. 368.
Lectures on Cataract: IV. Posterior Segment Complications in Postoperative Period; Some Difficult Extractions. R. E. Wright, Madras, India.—p. 376.
Nodular Dystrophy of Cornea: Six Years After Treatment with Corneal Resection and Radium: Report of Case. H. L. Hilgartner Jr. and H. L. Hilgartner Sr., Austin, Texas.—p. 387.
Tuberculous Papillitis with Anatomic Findings: Case. H. D. Lamb, St. Louis.—p. 390.
Hereditary Paralysis of Abducens Nerve: Report of Case. R. C. Laughlin, Baltimore.—p. 396.
Krukenberg's Spindle. M. A. Lasky, Brooklyn.—p. 399.
*Visual Sequels from Epidemic Meningococcus Meningitis. P. Heath, Detroit.—p. 401.
Influence of Vitamin D: Calcium-Phosphorus Complex in Production of Ocular Pathology: I. Histologic Study of Changes in Fibrous Tunic. S. N. Blackberg and A. A. Knapp, New York.—p. 405.

Visual Sequels from Meningococcic Meningitis.—Heath carried out medical, neurologic, ophthalmic and otologic examinations in sixty-eight cases selected because of a high proportion of complications 25.9 months after epidemic meningococcic infection. Ophthalmic and otologic examinations were made in twenty-five additional unselected cases 82.68 months after the epidemic. The medical examinations showed enlarged livers, spleens and hearts in from 5.8 to 8.8 per cent of the sixty-eight cases; other persisting complications were comparatively infrequent. The neurologic manifestations remaining after the acute stage of the disease were especially pronounced and severe in the personality field. These increased with the selected increase of other complications. The visual sequels averaged 16.1 per cent in ninety-three cases and were divided into muscular disturbances, 7.5 per cent; pupillary disturbances, 2.15 per cent; endophthalmitis, 4.3 per cent, and changes in the fundi, 2.15 per cent. Many complications of the eye in the acute stage of the disease were fugitive, but those persisting apparently had been acquired early in the disease. Loss of hearing, total and partial, was a most frequent and serious complication, and in the selected cases the visual sequels increased, but not proportionally with the auricular. Allowing for the higher proportion of complications in the patients who returned to the hospital because of their availability, the visual residue was less than 10 per cent. One is led to the conclusion that most of the visual damage in this disease is done early, during the overwhelming septicemia and toxemia, and that a continuing process is relatively uncommon.

American Journal of Physiology, Baltimore

118: 633-818 (April) 1937. Partial Index

Tissue Extracts and Blood Coagulation. F. R. Davison, Morgantown, W. Va.—p. 633.
*Study of Blood Sugar Raising Substance in Urine of Diabetic and Nondiabetic Patients. S. C. Werch and S. S. Altshuler, Eloise, Mich.—p. 659.
Positive Friedman Tests in Pregnant Rhesus Monkey, Macaca Mulatta. G. W. D. Hamlett, Baltimore.—p. 664.
Direct Determination of Renal Blood Flow and Renal Oxygen Consumption of Unanesthetized Dog. M. F. Mason, A. Blalock and T. R. Harrison, Nashville, Tenn.—p. 667.
Effects of Cortico-Adrenal Extract on Growth and Sexual Activities. O. G. Fitzhugh, Burlington, Vt.—p. 677.
Study of White Blood Cell Picture in Six Young Men. B. R. Kennon 3d, Mary E. Shipp and D. C. Hetherington, Durham, N. C.—p. 690.
Effect of Variations in Total Calcium Concentration on Coagulation Time of Blood. Marian M. Crane and H. N. Sanford, Chicago.—p. 703.
Effect of Hemorrhage, Intestinal Trauma and Histamine on Partition of Blood Stream. A. Blalock and S. E. Levy, Nashville, Tenn.—p. 734.
Influence of Oil Enemas on Colon Motility in the Dog. E. L. Borkon and R. D. Templeton, Chicago.—p. 775.
Control of Large Intestine by Decentralized Inferior Mesenteric Ganglion. H. Lawson and J. P. Holt, Louisville, Ky.—p. 780.
Some Neural Components of Visual Response. C. A. Elsberg and H. Spotnitz, New York.—p. 792.

Blood Sugar Raising Substance in Urine.—The so-called diabetogenic substance used in these experiments was prepared from the urine of six male and five female patients: four controlled and two uncontrolled diabetic patients taking insulin, two controlled diabetic patients not taking insulin and three nondiabetic patients. In each case the product was tested on three rabbits and three dogs, which had been previously starved for twenty-four hours. Since the material remaining in the urine after the removal of the protein gave a blood sugar rise in the animals used, it was evident to Werch and Altshuler that they were not dealing with a protein reaction. Their results are in accord with those of Houssay and his collaborators; namely, that the blood sugar raising substance is easily adsorbed, soluble in water and in 60 per cent alcohol and insoluble in fat solvents. It does not pass through ultrafilters and boiling destroys its activity. The experiments performed on the factor furnished by normal urine showed that it is present in nondiabetic urine, if at all, in small quantities, since the resulting blood sugar rise is within the limits of experimental error. From those experiments performed on the factor obtained from the urine of controlled diabetic patients taking insulin, one may conclude that it is present in considerable quantity. The factor prepared from uncontrolled diabetic patients taking insulin gave readings much like those obtained by the substance of the preceding group. The blood sugar rise given by the factor prepared from controlled diabetic patients not taking insulin is not as great as that given by the factor prepared from controlled and uncontrolled diabetic patients taking insulin, in whom the diabetes was obviously more severe. However, the rise is greater than the expected experimental error and hence the substance may be considered present even if only scantily.

American Journal of Public Health, New York

27: 313-432 (April) 1937

Control of Septic Sore Throat. G. J. Hucker, Geneva, N. Y.—p. 313.
Study of Air Pollution in New York City. S. Pincus and A. C. Stern, New York.—p. 321.
*Relation of Bovine Mastitis to Human Disease. P. B. Brooks and W. Von D. Tiedeman, Albany, N. Y.—p. 334.
Methods for Making and Significance of Cream and Butter Sediment Tests. E. H. Parfitt, Lafayette, Ind.—p. 341.
Improved Laboratory Apparatus. J. C. Willett, St. Louis.—p. 346.
Public Health and Physical Education. R. L. Allen, Ann Arbor, Mich. —p. 349.
Vi Antigen in Carrier Strains of Eberthella Typhosa. H. Welch and F. L. Mickle, Hartford, Conn.—p. 351.
Modification of Van Giesen's Stain for Negri Bodies. N. Nagle and C. L. Pfau, St. Louis.—p. 356.
Study of Vi Antigenic Fraction of Typhoid Bacilli Isolated from Carriers and Cases, and Antibody Content of Serum of These Patients. Lois Almen, Jane Read and W. D. Stovall, Madison, Wis.—p. 357.
International System of Health Indexes: Preliminary Report. K. Stouman and I. S. Falk, New York.—p. 363.
Reaction of Young Adults to Alum-Precipitated Diphtheria Toxoid. Ruth E. Boynton and R. V. Ellis, Minneapolis.—p. 371.
Working Environment. A. S. Gray, Hartford, Conn.—p. 378.

Relation of Bovine Mastitis to Human Disease.—The observations of Brooks and Tiedeman support the belief of others that the organisms responsible for cases of mastitis associated with outbreaks of septic sore throat and scarlet fever are always of human origin; i. e., their source is persons, usually milkers, with infected throats or, occasionally, wounds. In their laboratory the organisms clearly responsible for epidemics usually have not shown the characteristics of the so-called Streptococcus epidemicus. The streptococci agalactiae and mastitidis usually associated with mastitis are commonly regarded as harmless for man. However, their toxins, in milk from cows with mastitis, apparently have been responsible for outbreaks of gastro-enteritis. Similar organisms have been isolated in cases of low grade infection in man and in fatal cases of uterine infection. The authors know of no evidence that relative general freedom from mastitis, as reported in the South, offers any protection against accidental infection with human organisms. The general control of mastitis, if feasible, probably should be considered primarily an economic problem of the dairy industry. There is nothing in the physical condition in such a case of mastitis to differentiate it from the ordinary types of mastitis, and careful laboratory studies ordinarily are made only in the presence of an epidemic. There is evidence suggesting that organisms commonly present in mastitis may invade human tissues. Pasteurization destroys all these organisms and probably their toxins as well, but when milk is being sold without pasteurization all cases of mastitis should be regarded as potentially dangerous and milk from any cow suffering from the disease should be excluded.

Annals of Internal Medicine, Lancaster, Pa.

10: 1459-1616 (April) 1937

Thyro-Activator Hormone: Its Isolation from Anterior Lobe of Bovine Pituitary Gland and Its Effects on Thyroid Gland. E. Uhlenhuth, Baltimore.—p. 1459.
Auricular Fibrillation: Present Status with Review of Literature. I. C. Brill, Portland, Ore.—p. 1487.
*"Surgical Shock" Factors in Pneumonia. E. Andrews and H. N. Harkins, Chicago.—p. 1503.
*Encephalitis Due to Undulant Fever: Report of Four Cases. E. P. McCullagh, Cleveland, and H. M. Clodfelter, Columbus, Ohio.—p. 1508.
Nonvalvular Heart Disease Under the Age of Forty-Six Years. S. O. Dexter Jr. and D. L. Farnsworth, Boston.—p. 1514.
Significance of Specific Pneumococcus Types in Disease, Including Types IV to XXXII (Cooper). M. Finland, Boston.—p. 1531.
Outbreak of Trichiniasis in Central Ohio and Use of Bachman Intradermal Skin Test. A. A. Hall, Columbus, Ohio.—p. 1544.
Chronic Ulcerative Colitis: Factors Influencing Its Response to Specific Treatment. W. C. Simpson and J. A. Bargen, Rochester, Minn. —p. 1551.
*Further Observations on Rapid Hyposensitization. G. L. Waldbott and M. S. Ascher, Detroit.—p. 1556.
Therapeutic Use of Venesection in Polycythemia. D. J. Stephens and N. L. Kaltreider, Rochester, N. Y.—p. 1565.

"Surgical Shock" Factors in Pneumonia.—Andrews and Harkins observed the weight of the lungs and the presence of pleural fluid in twenty-three cases of lobar, terminal or bronchopneumonia coming to necropsy. The average excess weight of the lungs in these cases (assuming normal lungs to weigh 600 Gm.) represented 2.45 per cent of the body weight. In several instances there was appreciable pleural fluid. This brought the total increase to 2.81 per cent of the body weight. No chemical analyses were performed, but if this amount represents blood or blood plasma it is of considerable significance and a condition resembling surgical shock may result. The lungs of two distemper and one pneumonia dog were analyzed chemically and compared with those of a normal dog. The analyses show that the nitrogen and protein content in abnormal lungs is essentially the same as in normal lungs, indicating that the pneumonic exudate contained protein. In certain instances different portions of the lung (right or left side) were markedly edematous without corresponding dilution of the protein content.

Encephalitis Due to Undulant Fever.—McCullagh and Clodfelter report four cases of encephalitis, in one of which features highly suggestive of hypothalamic and pituitary damage were present. In all the cases the agglutination test or skin test indicated that undulant fever was present and in none were other etiologic factors demonstrated. The relationship between encephalitis and undulant fever was suspected in the first case and this was proved as far as was practicable. In the second case the diagnosis of encephalitis was made ten

V 10
1937

months before undulant fever was suspected as the etiologic factor. In the third case, decreased menstrual flow was associated with somnolence and other evidence of hypothalamic damage. The etiologic factors have apparently been the organisms of undulant fever as determined by agglutination tests in two cases and by intracutaneous tests in the other two cases. Two patients have shown improvement without specific treatment. The third patient failed to improve without specific treatment but showed some improvement following specific treatment. While there is improvement at present in the condition of the fourth patient, the prognosis seems uncertain in view of the history. While the authors realize that the evidence presented does not constitute proof that encephalitis in these cases was actually caused by the growth of Brucella melitensis in the perivascular spaces or nervous tissue of the brain and cord, the observations are nevertheless highly suggestive.

Rapid Hyposensitization.—Waldbott and Ascher believe that rapid hyposensitization deserves a definite place in the treatment of allergic diseases. Particularly in the severe asthmatic patient in whom the causative antigens are known, it has proved to be the method of choice. Successful treatment by this method is dependent on the administration of the proper antigen or combination of antigens; i. e., those which form the patient's dominant sensitivity. The danger of causing constitutional reactions or of aggravating existing symptoms can be obviated if one abides by the following principles: 1. The initial dose should be sufficiently low so as not to produce much local swelling. 2. The doses and intervals between treatments should be carefully gaged for each individual injection, the principal guide being the degree of local edema which is produced by the previous one. 3. An incipient constitutional reaction, which may merely manifest itself by a temporary aggravation of existing symptoms, should be recognized and carefully guarded against by a readjustment of the proposed schedule of treatment. 4. No epinephrine, or as little as possible, should be used in conjunction with the treatment in order not to interfere with the production of a local swelling.

Archives of Internal Medicine, Chicago

59: 561-758 (April) 1937

Retention and Utilization of Orally Administered Iron. W. M. Fowler and Adelaide P. Barer, Iowa City.—p. 561.
Chronic Nephritis in Rats Fed High Protein Diets. N. R. Blatherwick, New York, and E. M. Medlar, Mount McGregor, N. Y., with assistance of J. M. Connolly, Phoebe J. Bradshaw, Anna L. Post and Susan D. Sawyer.—p. 572.
*Acute Vegetative Endocarditis Caused by Bacillus Diphtheriae. G. J. Buddingh and Katherine Anderson, Nashville, Tenn.—p. 597.
*Clinical Significance of Bacteremia in Pneumococcic Pneumonia. R. C. Tilghman, Baltimore, and M. Finland, Boston.—p. 602.
The Blood Nitrite. E. J. Stieglitz and Alice E. Palmer, Chicago.—p. 620.
Effect of Sunlight on Clinical Manifestations of Pellagra. D. T. Smith and J. M. Ruffin, Durham, N. C.—p. 631.
Uveoparotitis. W. C. Thompson, Albany, N. Y.—p. 646.
*Relation of Experimental Atherosclerosis to Diets Rich in Vegetable Protein. R. H. Freyberg, Ann Arbor, Mich.—p. 660.
Torula Infection of the Central Nervous System. E. A. Levin, San Francisco.—p. 667.
Unusual Glycogen Storage in Case of Diabetes Mellitus. E. W. Brian, A. J. Schechter and E. L. Persons, Durham, N. C.—p. 685.
Chloroma: Review of Literature from 1926 to 1936 and Report of Three Cases. Ernestine V. Kandel, Chicago.—p. 691.
Treatment of Occlusive Arterial Disease of Extremities by Passive Vascular Exercise: Report of Sixty-Eight Cases. H. M. Korns and A. E. Feller, Iowa City.—p. 705.
Effect of Magnesium on Vascular Spasm in Rats. M. I. Rubin and M. Rapoport, Philadelphia.—p. 714.
Liver and Biliary Tract: Review for 1936. C. H. Greene, M. B. Handelsman and A. M. Babey, New York.—p. 724.

Endocarditis Caused by Bacillus Diphtheriae.—Buddingh and Anderson cite a case of acute vegetative mitral endocarditis. Morphologically and culturally the organism isolated from the spleen, heart blood and mitral vegetation in this case belonged to the group Corynebacterium. Intracutaneous tests in guinea-pigs with a twenty-four hour broth culture and the filtrate of a seven day broth culture produced reactions typical of Bacillus diphtheriae. Subcutaneous and intraperitoneal inoculations of the twenty-four hour broth culture caused death in an animal within three days. The administration of standard diphtheria antitoxin by the standard method protected guinea-pigs against the effect of the organism. These observations prove that the organism isolated from the mitral valve was a true strain of Bacillus diphtheriae. The port of entry in this case most likely was an ulceration of the nasopharynx, which was caused by the prolonged packing necessitated by continuous nosebleeds. The mitral valve, previously damaged by rheumatic disease, apparently provided a favorable lodging place for the organism, which gained entry to the blood stream from the ulcerated nasopharynx. From here embolic lesions were set up in the heart, intestine, kidneys, skin and mucous membranes. The endocarditis was rapid and fulminating, lasting for only five days.

Significance of Bacteremia in Pneumococcic Pneumonia.—Tilghman and Finland consider 1,586 cases of pneumonia associated with specific pneumococci of types I to XXXII (Cooper) in which cultures of the blood were made during the acute stage of the disease or at necropsy. For each type the death rate in the cases in which the blood cultures were positive was two or more times as high as in the cases in which the blood cultures were sterile, and for all types it averaged almost three times as high. Positive results of blood cultures were obtained in slightly more than a third of all the cases. The incidence of bacteremia varied widely in the cases of different types and was highest for the cases of pneumonia due to type II pneumococci. In the fatal cases the incidence of bacteremia was four times as great as in the nonfatal cases, and this proportion was even higher when the cases in which serum treatment was given were excluded. The mortality rate increased progressively with the ages of the patients, this being true for patients both with and without bacteremia. The greater mortality for bronchopneumonia was found for each type, both with and without bacteremia. Bacteremia, however, was less frequent with most types of atypical pneumonia. The death rate was higher in the cases in which the greater amount of lung was involved. There was little difference in the incidence of bacteremia and in the death rate for nonusers of alcohol and for habitual drinkers. There was a significantly greater incidence of bacteremia in the cases of pneumonia which occurred in the course of other serious conditions or diseases (so-called secondary pneumonia) than in the cases of primary pneumonia. The differences in the mortality rate at different leukocyte levels varied in the same manner as the incidence of bacteremia. Bacteremia was most frequent in the cases in which the leukocyte count was below 10,000. It was higher in the cases in which the count was 35,000 or more than in those in which it was between 10,000 and 34,000. Bacteremia was more than twice as frequent in the cases in which there were postpneumonic complications as in those in which there were none. Conversely, the complications were more than twice as frequent in the cases of bacteremia as in the cases in which bacteremia was not noted. In the cases in which no specific serum was given, the termination of the acute disease by crisis, lysis or death occurred most frequently between the seventh and the ninth day. Sterilization of the blood stream without apparent improvement of the acute symptoms or in spite of progression of the pulmonary lesion occurred more frequently after serum therapy was given than in cases in which no serum was administered. For the bacteremic patients who recovered, the colony count was usually below 10 per cubic centimeter of blood. The prognosis was usually, but not invariably, found to be unfavorable when the number of colonies increased in successive blood cultures.

Atherosclerosis and Diets Rich in Vegetable Protein.—The studies of Freyberg on the relationship of vegetable protein to atherosclerosis are contrary to those of Newburgh and Squier with animal protein. Diets containing 33 and 37.8 per cent of vegetable protein fed to rabbits for as long as eleven months failed to produce atherosclerosis. Rarely were cholesterol values of the blood observed which were higher than the normal range. These were in every case associated with undernutrition and are thought not to result directly from ingestion of large quantities of vegetable protein. These data suggest that the atherosclerosis observed when rabbits were fed diets rich in muscle meat was due to a nonprotein constituent of this animal food.

Archives of Pathology, Chicago

23: 457-614 (April) 1937

Sclerosis of Hepatic Veins in Chronic Congestive Heart Failure. H. Gross, New York.—p. 457.
Lipoid Pneumonia of Adult Type (Paraffinoma of the Lung): Report of Five Cases. K. Ikeda, St. Paul.—p. 470.
Weight of Normal Adult Human Kidneys and Its Variability. H. Wald, Minneapolis.—p. 493.
*Rôle of Allergy in Pathogenesis of Progressive Thrombosis; Especially in Regard to Changes in Endothelial Lining of Large Peripheral Veins. J. Tannenberg, Albany, N. Y.—p. 501.
Effect of Roentgen Rays on Blood Urea of Rats Immune to Jensen's Sarcoma. Isabella H. Perry, San Francisco.—p. 515.
Pathology of Prostatic Utricle. R. A. Moore, New York.—p. 517.
Rôle of Vitamin C in Resistance. D. Perla and Jessie Marmorston, New York.—p. 543.

Rôle of Allergy in Progressive Thrombosis.—Tannenberg studied the influence of allergy on the development of thrombosis with a view to the significance of allergic endothelial changes in the veins. Three groups of rabbits were prepared by nine intravenous injections of antigen (pneumococci, streptococci and sheep serum, respectively). From seven to eighteen days later the right jugular and femoral veins in each animal were exposed and narrowed and an intravenous reinjection was made into the corresponding vein of the ear. Merely local thrombi were obtained, not larger than those in the nonimmunized controls. Only a single rabbit, which in addition presented progressive, widely spread chronic nephritis, showed a kind of progressive thrombosis. In the narrowed segments of the veins endothelial changes morphologically similar to active proliferations were observed. But the failure of the changes to show progression seven, twenty-four and forty-eight hours after the operations and the occurrence of similar changes in the controls showed that to interpret them as allergic, active endothelial reactions would be erroneous. Serial sections revealed that these changes were produced by folding of the endothelium in the narrowed segments, superficial degenerative changes of the endothelium and deposits of blood leukocytes at the injured areas.

California and Western Medicine, San Francisco

46: 217-288 (April) 1937

Lymphomatoid Disease: Hodgkin's and Leukemic Types—Their Treatment. H. J. Ullmann, Santa Barbara.—p. 224.
Toxemias of Late Pregnancy. J. V. Campbell, Oakland.—p. 226.
Silicosis. H. H. F. Behneman, San Francisco.—p. 232.
*So-Called "Straddle" Injury: Its Management. E. W. Beach, Sacramento.—p. 234.
Pelvic Floor and Adjacent Viscera: Their Plastic Surgery. A. V. Pettit, San Francisco.—p. 240.
Immunotransfusion: Its Use in Treatment of Communicable Diseases. P. M. Hamilton, Alhambra.—p. 245.
Premedication for Surgery. J. C. Doyle, Los Angeles.—p. 248.
Ureteral Calculi. D. H. Gibbs, Los Angeles.—p. 252.
Acute Metastatic Spinal Epidural Abscess. W. J. Van Den Berg, Sacramento.—p. 257.

So-Called Straddle Injury.—When a person falls astride an unyielding surface, such as a timber, the soft tissues and urethra of the perineum are commonly pinched. The force is transmitted to and brought to bear on the weaker and unfortified abutting membranous structure; i. e., the terminal membranous urethra. When extravasation is probable, one should consider the urethral perineum as being divided into three parts, to wit: (1) the area within the superficial perineal interspace, (2) that between the inferior and superior layers of the triangular ligament, or the urogenital diaphragm, and (3) that above or proximal to the superior layer of the triangular ligament. It is also necessary to take cognizance of a fourth area, concerned more often with rupture of the pendulous urethra; extravasation may take place between the layers of Buck's fascia. The vulnerable portion of the membranous urethra (the distal portion) lies in the superficial perineal interspace. That portion of the membranous urethra between the inferior and superior layers of the triangular ligament is sometimes involved in straddle injuries, particularly by puncture wounds. Any extravasation proximal to the superficial layer of the triangular ligament may seep backward into the ischiorectal region and buttocks or into the thighs. The area above the superior layer of the triangular ligament is seldom concerned in these accidents save by puncture wounds. Beach's article is based on sixteen straddle injuries seen in the last twelve years. In analyzing the clinical material he discusses it under the following subheads: urethral injury, preexisting urethral strictures, urinary retention, perineal appearance, bleeding from the penis, pain and tenderness, shock, complications and sequels. The fundamental objective in treatment is to divert the urine from the site of urethral injury and, incidentally, in many cases to relieve acute urinary retention. There are three avenues of approach, used singly or in combination: the catheter, external urethrotomy and cystotomy. In every case of urethral rupture, whether the rupture is partial or complete, the patient should be hospitalized. Each patient is a law unto himself and must be handled accordingly. Many patients with partial ruptures, when catheterization is possible, do well and have no complications when an indwelling catheter is used. If catheterization is impossible, simple and direct surgical intervention must be undertaken without delay. Surgical treatment must not be too extensive at one session. It is better to drain the urine and give the patient a few days of rest, after which one is agreeably surprised at the ease of subsequent accomplishments.

Georgia Medical Association Journal, Atlanta

26: 129-168 (April) 1937

Cesarean Section. O. R. Thompson, Macon.—p. 129.
Meddlesome Obstetrics. J. Akerman, Augusta.—p. 132.
Hyperventilation: Report of Cases. G. F. Klugh Jr., Atlanta.—p. 134.
Recent Progress in Surgery. S. E. Sanchez, Barwick.—p. 137.

Journal of Bone and Joint Surgery, Boston

19: 279-574 (April) 1937. Partial Index

Generalized Osteochondrodystrophy: Eccentrochondroplastic Form. I. S. Hirsch, New York.—p. 297.
"Sciatica" Caused by Intervertebral-Disk Lesions: Report of Forty Cases of Rupture of Intervertebral Disk Occurring in Low Lumbar Spine and Causing Pressure on Cauda Equina. J. S. Barr, Boston.—p. 323.
Lesions of Lumbosacral Spine: Part I. Acute Traumatic Destruction of Lumbosacral Intervertebral Disk. P. C. Williams, Dallas, Texas.—p. 343.
Injuries to Accessory Processes of Spinal Vertebrae. M. C. Mensor, San Francisco.—p. 381.
Physiologic Method of Tendon Transplantation in Treatment of Paralytic Drop Foot. L. Mayer, New York.—p. 389.
Fascial Transplants in Paralytic and Other Conditions. F. D. Dickson, Kansas City, Mo.—p. 405.
*Rib-Splinter Graft in Spinal Fusion for Vertebral Tuberculosis. C. K. Petter, Oak Terrace, Minn.—p. 413.
Böhler Clavicular Splint in Treatment of Clavicular Injuries. A. H. Trynin, New York.—p. 417.
Some Factors Which Influence the Balance of the Foot in Walking: Stance Phase of Gait. R. P. Schwartz and A. L. Heath, Rochester, N. Y.—p. 431.
Peritendinitis Crepitans: Muscle-Effort Syndrome. N. J. Howard, San Francisco.—p. 447.
Avulsion Fracture of Tibial Attachments of Crucial Ligaments: Treatment by Operative Reduction. H. G. Lee, Boston.—p. 460.
Technic for Lessening Hemorrhage in Operations on Spine. G. Wagoner, Haverford, Pa.—p. 469.
Fractures and Dislocations of Cervical Spine: Part II. Dislocations, Complications and Operative Treatment. S. M. Roberts, Boston.—p. 477.
Conservative Method of Correcting Flexion Deformity of Knee Complicated by Posterior Luxation of Tibia. M. T. Horwitz, Philadelphia.—p. 522.
Multiple Sesamoids of Hands and Feet. R. F. Patterson, Knoxville, Tenn.—p. 531.
Ewing's Sarcoma: Atypical Case with Necropsy Findings. H. Charache, Brooklyn.—p. 533.

Rib-Splinter Graft for Vertebral Tuberculosis.—During the last few years Petter has performed osteosynthesis of the spine in thirty individuals with tuberculosis of the vertebrae, employing the operative technic described by Henry and Geist and including fusion of the vertebral articulations recommended by Hibbs. Practically all of this group, at the time of operation, had been confined to bed for many months because of the complexity of the lesions. In the entire series the operative mortality was zero. However, one disquieting event did occur in almost every case: when the bone chips for the graft were removed from the tibia a state of shock developed when the hammering was begun. Because of this complicating factor, the rib was used instead of the tibia. The preparation of the graft bed was carried out in the same manner as before, but the rib graft was placed in the form of splinters. Three cases have been so treated, and, although the postoperative period of observation is relatively short (five, four and three months), the author feels that the results warrant a report. Since most patients with vertebral tuberculosis must be treated by pro-

V 10
1937

longed recumbency, immediate strength of graft is not of importance. Therefore, solid rib or tibial grafts, anchored to the laminae and the spinous processes, are not, in the author's opinion, of as much value as a graft which in itself will resist little if any strain, but which later develops into a thick plate of solid bone, extending well out on the laminae laterally and from the spinous process of the second or third healthy vertebra above and below the diseased area. Solid cortical grafts, then, present immediate strength but a low-grade proliferative power, while rib splinters, composed of fine periosteal shreds, cortex and endosteum, possess a high degree of osteogenic ability, although they offer little early support.

Journal of Lab. and Clinical Medicine, St. Louis

22: 657-766 (April) 1937

Concerning Identity of Antibody in Experimental Anaphylaxis and That Occurring in Man Naturally or Spontaneously Sensitized. A. H. W. Caulfield, M. H. Brown and E. T. Waters, Toronto.—p. 657.
Study of Heat Sensitivity of Meningococcus in Vitro Within Range of Therapeutic Temperatures. L. Mary Moench, New York.—p. 665.
Urea and Chlorides in Human Parotid Saliva: Changes at Different Rates of Secretion as Affected by Atropine and Pilocarpine. R. G. Bramkamp, Banning, Calif.—p. 677.
Papillomas of the Breast: Study of 273 Specimens. D. H. Kaump and A. E. Mendes-Ferreira, Rochester, Minn.—p. 681.
*Pulmonary Moniliasis: Report of Fatal Case. A. H. Davis and E. L. Warren, Paterson, N. J.—p. 687.
Creatinuria in Scleroderma. E. Epstein and S. Ayres Jr., Los Angeles. —p. 697.
Visible Action of Sodium Lauryl Sulfate on Micro-Organisms. M. Bayliss, Omaha.—p. 700.
Influence of Sodium Amytal on Blood and Urine Urea Nitrogen. J. L. Gouaux, Shirley C. Cordill and A. G. Eaton, New Orleans.—p. 704.
Sporotrichosis Among Violinists. E. Hope, Sioux City, Iowa.—p. 708.
Action of Mammary Gland on Ovary: Preliminary Report. T. H. Cherry, New York.—p. 711.
Calibration of Micropipets and Tubes Simplified. Lillias D. Francis, New Haven, Conn.—p. 718.
Growth of Bacteria from Blood Stream in Defibrinated Blood. Anna Dean Dulaney and Frances Guthrie, Memphis, Tenn.—p. 721.
Mantles for Berkefeld and Mandler Filters: Note. S. B. Rose, Philadelphia.—p. 723.
Simple Mechanical Device for Shaking Blood Cell Counting Pipets. C. Olson, Rochester, Minn.—p. 724.
Simple Method for Obtaining Effective Anaerobiosis. J. E. Weiss and E. H. Spaulding, New Haven, Conn.—p. 726.
New van den Bergh Reaction for Determination of Serum Bilirubin Utilizing Photelometer. A. E. Osterberg, Rochester, Minn.—p. 729.
Polychromed Methylene Blue as Constituent of Romanowsky Stains. D. M. Kingsley, New Orleans.—p. 736.
Method of Obtaining Biopsy Specimens of Sternal Bone Marrow by Use of Spinal Needle. G. L. Weller Jr., Washington, D. C.—p. 752.

Pulmonary Moniliasis.—Davis and Warren review the literature and cite a fatal case of pulmonary moniliasis due to Monilia albicans. The strain of Monilia albicans isolated from the sputum of the patient was subjected to different environments and the reactions on nutrient broths, each containing 1 per cent mannose, maltose, dextrin, lactose, dextrose, galactose, mannite, saccharose, levulose, dulcite, rhamnose, arabinose and xylose were determined. Their observations definitely prove that the reaction of this strain of Monilia was constant on all the sugars. Monilia was found to be pathogenic for rabbits when injected intravenously and for white mice when injected subcutaneously or intraperitoneally but was not pathogenic for guinea-pigs when 1 cc. of sputum containing the organisms was injected intraperitoneally.

Journal of Nutrition, Philadelphia

13: 339-452 (April) 1937

Gizzard Factor of the Chick. H. J. Almquist and E. L. R. Stokstad, Berkeley, Calif.—p. 339.
Effect of Low Fat Diets on Serum Lipids of Rats. A. E. Hansen and W. R. Brown, Minneapolis.—p. 351.
Review: Recent Studies of Vitamins Required by Chicks. T. H. Jukes, Davis, Calif.—p. 359.
Identity of Flavin with Cataract-Preventive Factor. P. L. Day, W. J. Darby and W. C. Langston, Little Rock, Ark.—p. 389.
Protein Minima for Nitrogen Equilibrium with Different Proteins. D. Melnick and G. R. Cowgill, New Haven, Conn.—p. 401.
Vitamin B and Vitamin C Content of Marine Algae. E. R. Norris, Mary K. Simeon and H. B. Williams, Seattle.—p. 425.
*Multiple Nature of Vitamin D of Fish Oils. C. E. Bills, O. N. Massengale, Miriam Imboden and Helen Hall, Evansville, Ind.—p. 435.

Multiple Nature of Vitamin D of Fish Oils.—Bills and his co-workers compared the liver oils of twenty-five species of fish with cod liver oil by assay on rats and chickens. The relatively least effective oils were those from bluefin tuna of California, oriental tuna, striped tuna, bonito, albacore and totuava. The relatively most effective oil was that from the white sea bass of California. The maximum observed difference in relative effectiveness was about eighteen times, a difference much greater than the probable errors of assay. The differences were due to the existence of two or more forms of vitamin D in the oils. The possible relation of the vitamin D in the fish oils to certain artificial forms, particularly viosterol and irradiated 7-dehydrocholesterol, is discussed. The relative effectiveness of viosterol was lower than that of any fish oil. The relative effectiveness of irradiated 7-dehydrocholesterol was about the same as that of cod liver oil or irradiated ordinary cholesterol but inferior to that of white sea bass liver oil. Oils of related species, particularly the several tunas, differed widely in relative effectiveness.

Journal of Pharmacology & Exper. Therap., Baltimore

59: 359-484 (April) 1937

Adrenal Cortex Extract in Canine Anaphylactic Shock. C. A. Dragstedt, M. A. Mills and F. B. Mead, Chicago.—p. 359.
Pharmacologic Study of a New Drug: Diphenylacetyldiethylaminoethanol-ester-Hydrochloride. J. R. Johnson and S. R. M. Reynolds, Brooklyn. —p. 365.
Determination of Barbiturates in Blood and Urine by a New Method. J. T. Brundage and C. M. Gruber, Philadelphia.—p. 379.
Study of Acquired Resistance of Fixed Tissue Cells Morphologically Altered Through Processes of Repair: IV. Concerning Persistence of an Acquired Type of Atypical Liver Cell with Observations on Resistance of Such Cells to Toxic Action of Chloroform. W. De B. MacNider, Chapel Hill, N. C.—p. 393.
Local Anesthetics Derived from Alkaloid Cytisine. H. R. Ing and R. P. Patel, London, England.—p. 401.
Absorption of Acetyl-β-Methylcholine Chloride (Mechalyl) by Nasal Mucous Membrane. T. R. van Dellen, M. Bruger and I. S. Wright, New York.—p. 413.
*Chronic Toxicity of Dinitrophenol: Functional and Morphologic Changes in the Liver. T. L. Schulte, San Francisco.—p. 419.
Effects of Arsenicals on Trypanosoma Cruzi in Tissue Culture. C. A. Kofoid, Ethel McNeil and Fae D. Wood, San Francisco.—p. 424.
Peptone Shock. C. A. Dragstedt and F. B. Mead, Chicago.—p. 429.
Chronic Acetanilid Poisoning in the Albino Rat: Experimental Study of Addiction and Tolerance. E. J. Stanton and W. R. Agricola, Cleveland.—p. 437.
Synergic Calorigenic Actions of Epinephrine and Dinitrophenol. V. E. Hall and P. E. Chamberlin, Stanford University, Calif.—p. 451.
Some Effects of Bulbocapnine on Peripheral Vascular System. C. E. Leese and Alma Fogelberg, Washington, D. C.—p. 458.
Vitamin C and Diphtheria Toxin. A. Sigal and C. G. King, Pittsburgh. —p. 468.

Chronic Toxicity of Dinitrophenol.—Schulte administered alpha dinitrophenol orally to dogs for periods of 175 days in doses up to 26 mg. per kilogram daily. The doses, which were sufficient to produce subacute poisoning and eventual death, did not demonstrably affect the function of the liver as indicated by galactose and uric acid tolerance tests. Pathologic examination revealed no lenticular opacities, and the livers were essentially no different from those of unmedicated dogs kept under similar conditions. These results confirm and extend previous negative results and show that continued medication with high doses of dinitrophenol does not result in dogs in demonstrable impairment of the functional capacity of the liver according to a variety of tests.

Journal of Thoracic Surgery, St. Louis

6: 355-476 (April) 1937

Nervous Control of Respiration. P. Heinbecker, St. Louis.—p. 355.
Variations in the Ages, Sizes and Physical Characteristics of the Main Bronchi in Relation to Their Closure. C. E. Bird, Louisville, Ky.— p. 367.
Tumors of Chest Derived from Elements of Nervous System. W. D. Andrus, New York.—p. 381.
Experimental Production of Bronchiectasis: Study Based on Pulmonary Changes Occurring with Bronchial Obstruction. J. Weinberg, Omaha. —p. 402.
Conservation of First Rib in Apicolytic Thoracoplasty: Procedure and Advantages. H. Lilienthal, New York.—p. 414.
*Phrenic Interruption in Treatment of Pulmonary Tuberculosis: Five Year Study and Follow Up. B. P. Potter, F. B. Berry and F. Bortone, Secaucus, N. J.—p. 424.
Difficulties of Thoracoplasty and Uncollapsible Cavities. E. S. Welles, Saranac Lake, N. Y.—p. 430.
Thoracoscopic Removal of Broken Aspirating Needle: Case Report. C. H. Andrews, Prince Albert, Sask.—p. 436.
*One-Stage Pneumonectomy Under Local Anesthesia: Successful Case Reported. W. E. Burnett, Philadelphia.—p. 438.

Phrenic Interruption in Treatment of Tuberculosis.—Potter and his associates relate their observations in ninety-five cases in which phrenic interruption was performed and

which were followed from one to five years postoperatively. The operation was used as an independent procedure in sixty-eight cases, as a supplement to ineffective pneumothorax in twelve and for miscellaneous reasons in fifteen. The contraindications for diaphragmatic paralysis are huge cavities, thick-walled cavities and cavities embedded in a fibrous infiltrate, peripherally located adherent cavities, lesions within a lung surrounded by a thick pleura, and multiple cavities. Favorable results can be expected in small or moderate-sized cavernous lesions with a surrounding zone of lung tissue more or less free of infiltrate. A cavity within a shrinking lobe which has ceased to contract further is an indication, provided the infiltrative process about the cavity is not extensive and provided the latter has shown diminution from the original size along with the contraction of the lobe. Of the sixty-eight cases in which the operation was used independently, thirty-eight were found suitable in retrospect. Closure of the cavity occurred in 47 per cent of this group and reduction in the size of the cavity with general clinical improvement in 31 per cent, and thoracoplasty was spared in 15 per cent. The average interval between operation and closure of the cavity was seven and one-half months. While the authors do not advocate the procedure unless it is definitely indicated, nevertheless they suggest that, in borderline cases, in which thoracoplasy is dangerous, a temporary interruption may turn the tide for the patient and make thoracoplasty possible. The operation, when used as a supplement for ineffective pneumothorax in selected cases in which there is a bow string effect, offers about 50 per cent success. The reduction of the intrapleural space is the chief indication for the miscellaneous uses of phrenic interruption.

One-Stage Pneumonectomy Under Local Anesthesia.—Burnett describes a case in which pneumonectomy was successful and outlines the technic and the local anesthesia that he used for the procedure. The technic of the anesthesia was developed from extension of the field block technic for rib resection in the treatment of empyema and partial thoracoplasty. It consists of the use of 0.5 per cent procaine hydrochloride in saline solution to produce a series of wheals over the intercostal spaces, from the second to the tenth or eleventh, at the edge of the erector spinae muscle. After the first, these are made painlessly from beneath the skin. Through these wheals, injections of about 5 cc. of 1 per cent procaine hydrochloride are made into the appropriate nerves. If the incision is to be carried to the midline anteriorly, the crossed innervation from the opposite side has to be interrupted by a band of procaine hydrochloride at this point. Towel clips, used in the upper pectoral region, require additional local injection into each spot. Ten minutes after the last injection, the anesthesia is checked by the needle and finger method. If it is not complete, injections are again made into the nerves which have not been interrupted. When the chest is opened, inhalations of carbon dioxide and oxygen under pressure may be necessary to prevent sudden complete collapse. They are unnecessary if pneumothorax has previously been instituted or if the lung is extensively adherent. The injection made into the phrenic nerve in the thorax, when it is exposed, interrupts the sensory and motor diaphragmatic innervation. The pulmonary ligament and the hilus of the lung are sensitive areas, and 1 per cent procaine hydrochloride has to be injected into them. Pouring 1 per cent procaine hydrochloride over the pleura and maintaining its application with a gauze sponge saturated with the solution while one is dissecting adhesions or exploring the remainder of the thorax produces insensitivity there also. Children have been prepared by the preliminary injection of fairly large amounts of morphine in divided doses and adults by the use of one-sixth grain (10 mg.) of morphine supplemented by rectal injection of tribrom-ethanol, from 40 to 60 mg. per kilogram, depending on the type of person. Under these circumstances, the cough reflex is not abolished, although it is definitely decreased. The disadvantages of this method are the same as those for most operations with local anesthesia. The advantage is that for the same procedure the amount of shock is greatly decreased or a more extensive procedure is possible, at a one stage operation, than is possible with anesthesia by inhalation. The difficulty of certain complicated types of administration of anesthesia are avoided. The operator is able to work accurately and without haste; the cough reflex for expulsion of pus or blood as the lung is manipulated is maintained, and there is considerable improvement in immediate postoperative convalescence.

Military Surgeon, Washington, D. C.

80: 251-330 (April) 1937

The Physician's Reading. L. B. Wilson.—p. 251.
War Service with an Evacuation Hospital. J. R. Darnall.—p. 261.
Why Attend Medical Meetings? B. A. Moxness.—p. 276.
Serum Treatment in Lobar Pneumonia. A. Carbonell and E. P. Campbell.—p. 280.
The Common Cold. F. J. Vokoun.—p. 285.
Medicomilitary Possibilities of Cystometry and Sphincterometry: Studies in Bladder Function V. W. Bisber.—p. 287.
Multiple Myeloma with Diffuse Skeletal Involvement: Case Report. R. G. Prentiss Jr.—p. 294.
Medical Administrative Corps. C. V. Lewis.—p. 299.
What England and Canada Are Doing for the Disabled War Veterans. F. C. Kidner.—p. 305.
Eighth Annual Mayo Foundation Medicomilitary Training Unit. N. G. Long.—p. 309.

Missouri State Medical Assn. Journal, St. Louis

34: 109-146 (April) 1937

Regional Enteritis. L. H. Pollock, Kansas City.—p. 109.
Technic of Radical Hemorrhoidectomy: Procedure with Elimination of Element of Pain. S. E. Newman, St. Louis.—p. 114.
Prostatic Hypertrophy as Definite Endocrine Problem. V. H. Bergmann, Kansas City.—p. 119.
Epidemic Pleurodynia in Chariton County. G. W. Hawkins and F. L. Harms, Salisbury.—p. 121.
Impetigo Contagiosa. H. A. Dunaway, Sikeston.—p. 122.

New England Journal of Medicine, Boston

216: 587-636 (April 8) 1937

Haemophilus Influenzae (Pfeiffer Bacillus) Meningitis and Its Specific Treatment. L. D. Fothergill, Boston.—p. 587.
Pharyngo-Esophageal Diverticulum: Analysis of Fifty-Three Consecutive Operative Cases. F. H. Lahey and W. B. Hoover, Boston.—p. 591.
Coincidence of Chicken Pox and Lymphatic Leukemia: Report of Case. A. A. Holbrook, Milwaukee.—p. 598.
Chronic Sinusitis in Children. H. B. Marks, Pawtucket, R. I.—p. 604.

216: 637-680 (April 15) 1937

*Exstrophy of the Bladder. W. E. Ladd and T. H. Lanman, Boston.—p. 637.
Arthroplasty of the Elbow. S. M. Roberts and R. J. Joplin, Boston.—p. 646.
Interstitial Pregnancy Ruptured Through a Tubal Stump. E. D'Errico, Boston.—p. 634.
Double Kidney Pelvis, and Nonfusion of Laminae of the First and Fifth Lumbar Vertebrae in Each of Twins. R. A. Harpin, Boston.—p. 658.

Exstrophy of the Bladder.—Ladd and Lanman describe a three stage ureterosigmoidostomy that they used in fifteen cases of exstrophy of the bladder. The best time for the operation is between the ages of 3 and 5 years. The patient should have several days of hospitalization before the first operation. Intravenous pyelograms, determinations of the nonprotein nitrogen and tests with phenolsulfonphthalein should be made. The patient should have a low residue diet and should be given a saline solution enema daily. Dextrose should be given in generous amounts for forty-eight hours prior to the operation. Tribrom-ethanol, 80 mg. per kilogram, supplemented by gas and oxygen and a little ether, seems to be the anesthetic of choice. The clamped rectal tube, which is used for the administration of the tribrom-ethanol, is left inserted in the rectum. The exstrophied bladder is carefully walled off with sterile gutta-percha before the patient is draped. The right ureter is transplanted first. It is freed from its bed down almost to the bladder, where it is tied and cut off with the actual cautery or with an electric knife, and the distal end is allowed to drop back behind the peritoneum. The sigmoid is then brought over so that the proper position of the line of implantation can be judged. This should be made so that its proximal end will lie close to the proximal end of the freed ureter as it leaves its retroperitoneal bed. The rectal tube is then unclamped, the sigmoid is milked to express gas and liquid contents, and right angle intestinal clamps are applied. An incision through the serous and muscular coats in the line previously ascertained is made for from 2½ to 3 inches (6.2 to 7.6 cm.). The ureter, with a temporary, inlying catheter, is placed on this submucosa in such a way that it will not kink. A sufficient amount of the ureter is cut off so that, when it is in place, it is neither on tension nor kinked. A longitudinal cut is made in the posterior wall of the ureter to prevent its orifice from

ever becoming constricted. A double-ended suture is placed in the end of the ureter from within outward to evert it. The mucosa of the intestine is opened with the electric knife and the ureter is carried into the lumen of the sigmoid by the double-ended suture, which pierces all layers of the bowel from within outward and is tied holding the ureter in place. The two rows of sutures are next completed. The sigmoid is next stitched with interrupted silk stitches to the medial side of the peritoneal incision that exposed the ureter. When this step is completed the lateral side is stitched, making the whole line of anastomosis extraperitoneal. The abdominal wound is closed without drainage. Two weeks or so later the left ureter is implanted into the sigmoid in a similar manner. The site of the second transplant can be chosen higher up in the sigmoid so that neither the sigmoid nor the two transplants will be kinked or strained. The administration of large amounts of fluid after the operation is essential. The exstrophied bladder should be removed by an elliptic incision made in the skin close to the mucous border and the dissection of the mucous membrane and part of the musculature. The dissection is carried down to a point in the region of the verumontanum, in the male, so as to save the ejaculatory ducts. The resulting space may be largely covered by suturing the edges of the anterior rectus fascia together and by closing the skin over these edges. In the male a plastic operation on the epispadias should be performed later. In the female the vagina, uterus and adnexa are usually present and normal. In the authors' series no mortality followed the cystectomy, and herniation through the cleft abdomen has not been a matter of concern. In fourteen of the fifteen cases, urine appeared within forty-eight hours and usually within twenty-four hours after the initial transplant. Control of the intestine for from three to four hours during the day was obtained in nearly all cases within three weeks or less after operation.

New York State Journal of Medicine, New York

37: 719-840 (April 15) 1937

Iodized Oil Technic in Pterygium Cases. T. J. Dimitry, New Orleans.—p. 719.
Serum Therapy for Pneumococcus Type I Pneumonia. J. G. M. Bullowa, New York, and M. J. Hanigsberg, Brooklyn.—p. 723.

Northwest Medicine, Seattle

36: 111-148 (April) 1937

Congenital Malformation of Bile Ducts: Report of Case with Severe Hemorrhagic Manifestations with Recovery. J. B. Bilderback, W. H. Buecermann and S. H. Goodnight, Portland, Ore.—p. 111.
Severe Burns Complicated by Appendicitis. H. W. Rose, Seattle.—p. 113.
Rôle of Biopsy in Diagnosis. C. R. Jensen, Seattle.—p. 114.
Diagnosis of Ectopic Pregnancy. M. F. Fuller, Aberdeen, Wash.—p. 118.
Control of Pregnancy Toxemias by Adequate Prenatal Care. J. D. Kindschi, Portland, Ore.—p. 121.
*Importance of Kidney Function in Alkalosis. E. H. Berger, Portland, Ore.—p. 125.
Urinary Obstruction. W. L. Ross Jr., Yakima, Wash.—p. 129.
One Hundred Years of Progress in Medicine. H. M. F. Behneman, San Francisco.—p. 133.

Importance of Kidney Function in Alkalosis.—Berger studied seven cases in which there were definite symptoms and chemical evidence in the blood of alkalosis following intensive use of alkali in the treatment of peptic ulcer. None of the patients gave a previous history of nephritis. Mild to moderate anemia was present in each case except two. Treatment consisted in some cases of either discontinuing the administration of alkaline powders or reducing the amount. In the rest tribasic calcium phosphate and, in one case, mucin were substituted as needed for the relief of distress. Fluids were forced by mouth, and a 10 per cent solution of dextrose and 1 per cent saline solution were administered intravenously. Operative procedures were subsequently carried out on four patients. Studies of the renal function were carried out on each at the time alkalosis was first diagnosed. One week or more later, when the blood urea and carbon dioxide were normal, renal studies were again repeated. After the alkalosis was relieved, evidence of impaired renal function was found to be present in two patients. The other two had normal renal function. The possibility of alkalosis in the treatment of peptic ulcer should be kept constantly in mind. The phenomenon usually comes on gradually. Apparently no relation exists between the amount of alkali ingested and the onset of alkalosis. The symptoms of distaste for milk, the patient claiming that it is sour, of headache and of weakness are constant, and they occur early. They are noted in the period of compensated alkalosis prior to the characteristic changes in blood chemistry that follow. Unless these symptoms are appreciated and the condition recognized, the condition will progress and may go on to convulsions and even coma. Impaired renal function was demonstrated in all the cases during alkalosis. The status of the kidneys should be determined in each case before the patient is placed on alkaline powders. The renal excretion of sulfates is a sensitive index of renal function. It is not implied that alkalosis cannot occur unless there is previous renal injury but rather that in the presence of renal insufficiency the threshold of safety is less, and not only that alkalosis is produced more easily in the presence of a preexisting renal injury but also that renal injury is increased concurrently with alkalosis, a vicious cycle being set up. Neither basic nor acid salts can be administered with impunity in the presence of renal impairment. In the presence of normal renal function, the buffer mechanism maintaining the acid-base equilibrium can absorb the assault of either acidifying or basic salts with little or no variation. The liver plays an important part in maintaining the acid-base equilibrium and in the presence of hepatic insufficiency is disturbed much more easily, as is evidenced by the intolerance in cases of cirrhosis to ingestion of either acid or basic salts.

Ohio State Medical Journal, Columbus

33: 357-488 (April) 1937

Obstructions at Bladder Neck in Men, Women and Children. J. R. Caulk, St. Louis.—p. 373.
Present Status of Pituitary Gland in Clinical Medicine. E. P. McCullagh, Cleveland.—p. 379.
Endometriosis. R. C. King, Toledo.—p. 390.
Biologic Test for Determination of Fibrogenetic Properties of Dust. C. P. McCord, J. A. Kasper and W. L. Brosius, Detroit.—p. 394.
Chronic Uveitis: Etiology and Newer Methods of Treatment. A. A. Levin, Cincinnati.—p. 397.
Unconscious Motivation of Criminal Behavior. A. D. Finlayson, Cleveland.—p. 401.
Rubella: Report of an Epidemic with an Unusual Number of Complications and Relapses. T. F. Humphrey, Dayton, and E. W. Ekermeyer, Xenia.—p. 406.
Medical Management of Chronic Gallbladder Disease. E. A. Marshall, Cleveland.—p. 409.

Psychoanalytic Quarterly, Albany, N. Y.

6: 1-138 (Jan.) 1937

Depersonalization as Defense Mechanism. D. Feigenbaum, New York.—p. 4.
Absence of Grief. Helene Deutsch, Boston.—p. 12.
Reality and the Unconscious. T. M. French, Chicago.—p. 23.
Reality Testing in Dreams. T. M. French, Chicago.—p. 62.
Balzac's Père Goriot. M. L. Miller, Chicago.—p. 78.
Regression in Case of Multiple Phobia. E. R. Eisler, Chicago.—p. 86.
Defense Mechanisms and Structure of the Total Personality. Therese Benedek, Chicago.—p. 96.

Radiology, Syracuse, N. Y.

28: 391-520 (April) 1937

Why Pneumoperitoneum? I. F. Stein, Chicago.—p. 391.
Comparison of Use of Transuterine Insufflation with Carbon Dioxide and Roentgenograms Taken After Injection of Iodized Oil. L. M. Randall, Rochester, Minn.—p. 399.
Roentgenography in Obstetrics. J. B. Jacobs, Washington, D. C.—p. 406.
*Value of Hysterosalpingography in Gynecologic Diagnosis. A. Mathieu, Portland, Ore.—p. 427.
*Carcinoma of the Bronchus. L. H. Clerf, Philadelphia.—p. 438.
Primary Bronchial Carcinoma and Pulmonary Metastasis Compared Clinically and Roentgenologically. J. T. Farrell Jr., Philadelphia.—p. 445.
Roentgenographic Unsharpness of the Shadow of a Moving Object. S. R. Warren Jr., Philadelphia.—p. 450.
The Congenital Heart: Radiologic Study, with Seven Reported Cases. J. Friedman, New York.—p. 466.
Determination of Nasofrontal Suture and the Nasion in the Living. M. F. Ashley-Montagu, New York.—p. 473.
Deep Therapy Table with Tube Stand Combined and Revolving in Arc About the Table: Intensity Distribution Within Paraffin Pelvis for Various Ports of Entry. N. Flax, Covington, Ky.—p. 477.

Hysterosalpingography in Gynecologic Diagnosis.—Mathieu believes that hysterosalpingography is as valuable and as welcome as visualization of the bronchial tree or the urinary

tract. Few untoward effects have been reported in the literature; most of those that have been reported were due to faulty technic. If one uses good technic and avoids the maneuver in the presence of active infection or normal pregnancy, it offers a maximum of results in diagnosis as it pertains to the cavities of the uterus and tubes with a minimal amount of discomfort. If more hysterosalpingograms are taken, fewer hysterectomies will be performed when curettage will suffice, and fewer curettages will be done when hysterectomy is necessary. The most valuable field for hysterosalpingography is in the study of sterility, wherein it is important to decide whether or not the tubes are patent and to determine the position and the nature of obstructions. In several of the author's patients, pregnancy followed soon after the injection of iodized oil when this was the only procedure done that might have had a corrective value. In such cases it is reasonable to assume that the tube was actually opened in some way by the process.

Carcinoma of the Bronchus.—Clerf declares that if there is to be any advance in the surgical treatment of bronchial carcinoma it will depend almost entirely on arriving at a correct diagnosis early in the disease. This responsibility rests primarily with the clinician, who should be "cancer of the bronchus minded" as well as "roentgen-ray minded." When cancer is a diagnostic possibility, it is important to arrive promptly at a diagnosis. No group of symptoms or signs can be considered diagnostic of carcinoma; they are dependent on the location of the growth and its influence on adjacent structures. The early symptoms are important, as their correct interpretation will lead to early diagnosis. A diagnosis made when the carcinoma is advanced is of statistical value only; from the patient's standpoint it is of little or no importance. Cough with or without sputum has been the most common early symptom of carcinoma involving the larger bronchi. If associated with blood-streaked mucoid sputum in the absence of tuberculosis, it is highly suggestive of bronchial neoplasm. A wheeze in conjunction with cough and occasional blood-streaked sputum or absence of sputum constitutes strong evidence that new growth is producing early partial obstruction to a bronchus. Pain is not a common early manifestation of carcinoma originating in the larger bronchi. It is, however, considered "the most common signal symptom" of peripheral carcinoma and is due to peripheral extension of the growth to the pleura and extrapleural structures. Dyspnea, pleural effusion, loss of weight, weakness, fever and sweats, dysphagia, hoarseness, pupillary changes and engorgement of the veins of the neck and chest are commonly evidences of advanced disease and are principally of didactic interest. Difficulty in diagnosis is encountered in cases in which the changes are suggestive of tuberculosis, pneumonitis, bronchiectasis or pulmonary abscess without roentgenographic evidences of tumor or bronchial obstruction. Since more than 50 per cent of primary bronchial neoplasms originate in the larger bronchi, it is evident that in many cases during the early stages there is partial obstruction to a bronchus, with obstructive emphysema. Roentgenoscopic examination of the chest and a study of the roentgenograms made at the end of full inspiration and expiration aid greatly in the recognition of nonopaque foreign bodies in the bronchus and a knowledge of the mechanism of obstructive emphysema. Bronchoscopy is the most definite and positive diagnostic procedure available. One may obtain a direct endoscopic view of the growth; in addition, tissue may be secured for histologic examination. If no intrusion of growth into the bronchus can be visualized, one may observe evidences of infiltration of the bronchial wall, fixity and rigidity. The bronchoscopist should be given an opportunity to investigate endoscopically all cases of obstructive emphysema or obstructive atelectasis. Unexplained cough, hemoptysis and wheeze also warrant bronchoscopy.

Tennessee State Medical Assn. Journal, Nashville

30: 119-152 (April) 1937

Rheumatic Fever in Children: Report of Case. R. F. Thomas, Sevierville.—p. 119.
Coronary Artery Disease with Unusual and Dramatic Sequels. D. D. Vance, Bristol.—p. 124.
Repair of Old Lacerations at Time of Delivery. W. T. Pride, Memphis.—p. 127.
Intestinal Obstruction (Acute Mechanical): Observations Suggested by Recent Publications. R. A. Barr, Nashville.—p. 132.

Texas State Journal of Medicine, Fort Worth

32: 789-868 (April) 1937

Prevention and Treatment of Puerperal Infection. C. R. Hannah, Dallas.—p. 794.
Conduct of Late Second Stage of Labor with Low Forceps. M. J. Meynier Jr., Houston.—p. 798.
Trichomonas Vaginalis Vaginitis Pathognomonic Lesion and Pathologic Findings in 4,000 Cases. K. J. Karnaky, Houston.—p. 803.
Treatment of Gonorrheal Vaginitis in the Young Female. C. B. Sacher, Dallas.—p. 809.
Comparison of Hypertrophied Anal Papillae and Rectal Polyps. V. C. Tucker, San Antonio.—p. 810.
Fibrosarcoma of Soft Tissues of Extremities. R. Hargrave, Wichita Falls.—p. 815.
Hypocalcemia of Parathyroid Origin. R. E. Maresh, Houston.—p. 819.
Precaution Against Hemorrhage and Infections Following Intranasal Operations. C. J. Boehs, San Antonio.—p. 824.

West Virginia Medical Journal, Charleston

33: 145-192 (April) 1937

Perineorrhaphy, with Note on Longitudinal Knotless Sutures. P. Rucker, Richmond, Va.—p. 145.
Influence of Ductless Glands on Character. R. Kessel, Charleston.—p. 153.
Renal Disorders in General Practice. A. E. Goldstein, Baltimore.—p. 161.
The Problem of Headache. L. C. McGee, Elkins.—p. 166.
Massive Edema of Vulva. C. S. Bickel, J. O. Howells and J. S. Meier, Wheeling.—p. 171.

Wisconsin Medical Journal, Madison

36: 233-328 (April) 1937

Problems of the Deaf. T. L. Tolan, Milwaukee.—p. 247.
Some Clinical Problems in Refraction. A. deH. Prangen, Rochester, Minn.—p. 252.
Orthoptic Treatment of Strabismus. J. B. Hitz, Milwaukee.—p. 258.
*Problems Involved in Diagnosis and Treatment of Malignancies of Nasal Accessory Sinuses. F. L. Lederer, Chicago.—p. 263.
Some Factors in the Etiology of Iritis. L. A. Copps and G. L. McCormick, Marshfield.—p. 268.
Use of Vaccines and Serums in Diagnosis, Prevention and Treatment of Disease. J. E. Gonce Jr., Madison.—p. 275.

Malignant Growths of Nasal Accessory Sinuses.—Lederer believes that a malignant neoplasm of a nasal sinus is seldom if ever confined within a mathematically calculable area. By virtue of the characteristically slow growth of a neoplasm within a bony cavity it is observed as such at a time when it falls within the classification of inoperability; that is, when the diagnosis finally becomes self evident. Unfortunately, inspection, auscultation and palpation, anterior and posterior rhinoscopy, endoscopy, transillumination, roentgen examination and biopsy do not always facilitate a conclusive diagnosis in early cases. Furthermore, confusing clinical pictures are produced by intercurrent or coexisting diseases, particularly by those which cause swellings about the maxilla and orbit. Syphilis and tuberculosis may obscure the diagnosis of cancer, thereby delaying proper therapy. Peculiar histologic responses of the various tissues to tumor growth and infection may also hinder a correct diagnosis. The development of sinus cancer is slow, metastasizing infrequently. There is a definite tendency of such tumors to invade the meninges and other intracranial structures. While the symptoms usually vary, in the main the points to be noted are unilateral nasal obstruction, mucopurulent or serosanguineous discharge, headaches (usually frontal), nasal hemorrhage, fetor, cranial nerve involvement consisting of sensory disturbances (neuralgic-like pains, paresthesia and anesthesia), ocular disturbances (proptosis, limitation of motion, papillitis and atrophy), olfactory disturbances (anosmia and parosmia) and external deformity. Surgery, electrosurgery and irradiation combined have given fair results in malignant tumors of the nasal sinuses, especially those of the antrum, in spite of the fact that 80 per cent have been termed inoperable because of invasion of vital structures. Malignant growths of the frontal sinus if seen in time may be operable, in which case the sinus should be exposed widely through the external route. Cosmetic results should not enter into consideration. As much of the mass is removed as is possible and the remainder is coagulated by surgical diathermy. If the dura is invaded, the frontal lobe is to be exposed fully. The skin flaps are sutured to one side and the wound is left wide open for contact radium applications. Radium may be used in this region with impunity because the dura is quite resistant.

V 10
1937

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

21: 161-224 (April) 1937

Stereoscope in Theory and Practice, Also a New Precision Type Stereoscope. E. Krimsky.—p. 161.
Trachoma. R. E. Wright.—p. 198.
Lymphosarcoma of Eyelid. V. M. Métivier.—p. 202.
Modification of Bowman's Lacrimal Probe. E. J. Somerset.—p. 207.

British Medical Journal, London

1: 595-650 (March 20) 1937

Medicinal Kaolin in Food Poisoning: Critical Survey. N. Mutch.—p. 595.
*Infectious Mononucleosis (Glandular Fever) and Monocytic Leukemia. M. C. G. Israels.—p. 601.
Terminal Caseating Tuberculous Bronchopneumonia in Which Date of Onset Was Known. C. E. H. Turner.—p. 604.
Carcinoma of Bronchus in a Boy Aged Nineteen. J. G. Hailwood.—p. 606.
Industrial Aspect of Fractures of Os Calcis. B. McFarland.—p. 607.
Three Separate Causes of Antepartum Hemorrhage Occurring Simultaneously. P. J. Ganner.—p. 610.

Infectious Mononucleosis and Monocytic Leukemia.—Israëls describes a case of monocytic leukemia and contrasts its clinical and hematologic features with those of two notably dissimilar cases of infectious mononucleosis. Case 1 is typical of monocytic leukemia, case 3 is characteristic of glandular fever, while case 2 shows features of both. In characteristic cases, such as cases 1 and 3, the differential diagnosis presents little difficulty. The patient with acute leukemia is severely ill, there is marked anemia, and a high proportion of the leukocytes are recognizably immature. The patient with glandular fever has an illness which is clinically mild, there is no anemia of any significance, and although there is a mononucleosis only a small proportion of the cells can be interpreted as immature. In less typical cases the diagnosis may present great difficulty. Both conditions may show pyrexia, enlarged lymph glands and an enlarged spleen. Lesions of the mouth and sore throat, not part of a leukemic syndrome, may be accompanied by a mononucleosis. Case 2 shows that hemorrhage and anemia may occur in infectious mononucleosis as well as in leukemia; but the anemia of acute leukemia, except in the early stages, is usually more severe. The total white cell count is no guide; the majority of cases of acute leukemia have white cell counts of less than 40,000 per cubic millimeter and many are less than 10,000 per cubic millimeter. The morphology of the mononuclears is, however, usually very helpful, and this, together with the clinical impression of the illness, are the most useful points. The "heterophile antibody" tests introduced by Paul and Bunnell (1932 and 1933) also seem to be promising.

Glasgow Medical Journal

9: 105-156 (March) 1937

*Obstructive Anuria. A. Jacobs.—p. 105.
Posttraumatic Painful Osteoporosis (Sudeck's Atrophy). D. S. Middleton.—p. 115.

Obstructive Anuria.—Jacobs reports seven cases of obstructive anuria in which early recognition and treatment of the responsible lesion resulted in recovery. Five of these patients had previously been subjected to a nephrectomy, carried out for advanced calculus disease in four and for renal tuberculosis in one. In one of the patients spontaneous recovery ensued after expelling a stone from the left ureter: reflex anuria. In the seventh case, in which the anuria was apparently of traumatic origin, complete urologic investigation failed to establish the presence of a second kidney. Nephrostomy was carried out in five instances. In two this was a temporary measure, but in the other three the kidney was permanently drained by this method. During the last few years the author has found an increasing field of usefulness for this operation, not only in dealing with the crisis of anuria, but as a temporary measure of deviating the urinary stream when operating for such conditions as massive renal calculus, bilateral calculus disease and hydronephrosis.

Journal of Anatomy, London

71: 319-420 (April) 1937

Projection of Medial Geniculate Body to Cerebral Cortex in Macaque Monkey. A. E. Walker.—p. 319.
Experimental Investigation of Cerebral Hemispheres of Lacerta Viridis. F. Goldby.—p. 332.
Narial Margins in Man. E. H. Johnson.—p. 356.
Cheek Bones in Teleostome Fishes. T. S. Westoll.—p. 362.
*Ossification of Human Frontal Bone, with Especial Reference to Its Presumed Prefrontal and Postfrontal Elements. V. T. Inman and J. B. de C. M. Saunders.—p. 383.
Interosseous Muscles of the Hand. C. R. Salsbury.—p. 395.
Sheath of Rectus Abdominis. R. Walmsley.—p. 404.

Ossification of Human Frontal Bone.—Inman and Saunders give a historical review of the literature on the ossification of the frontal bone and its accessory centers. Observations were made on a total of ninety-eight fetal skulls ranging in age from the sixth week of intra-uterine life to the tenth month after birth. Primary centers of the frontal bone make their appearance in the superciliary region. No secondary centers of ossification have been found at any time in the frontal bone. The changes that have given rise to the error that such centers exist are considered. Attempts that have been made to homologize portions of the frontal bone with the prefrontal and postfrontal elements of premammalian skulls have been based on the presumed existence of secondary centers. As no such centers exist in the human skull, conclusions drawn on this basis must be discarded.

Journal of Laryngology and Otology, London

52: 153-232 (March) 1937

The Problem of Early Laryngeal Tuberculosis. N. R. Blegvad.—p. 153.
The Renaissance of Otology: Joseph Toynbee and His Contemporaries. D. Guthrie.—p. 163.

Journal of Pathology and Bacteriology, Edinburgh

44: 281-516 (March) 1937

Toxicity of Certain Chlorine Derivatives of Benzene, with Especial Reference to O-Dichlorobenzene. G. R. Cameron and J. C. Thomas, with collaboration of S. A. Ashmore, J. L. Buchan, E. H. Warren and A. W. M. Hughes.—p. 281.
Massive Necrosis ("Toxic Infarction") of Liver Following Intraportal Administration of Poisons. G. R. Cameron, W. A. E. Karunaratne and J. C. Thomas.—p. 297.
Anatomic Basis for Resistance to Pituitrin in Diabetes Insipidus. J. H. Biggart.—p. 305.
Intra-Endothelial Bodies in Vessels of the Brain and Spinal Cord in Rabies. A. C. Coles.—p. 315.
*Study of Intestinal Flora of Children, with Especial Reference to Incidence of Coliform Bacilli in Health and in Acute Primary Gastro-Enteritis. J. W. S. Blacklock, K. J. Guthrie and I. Macpherson.—p. 321.
Observations on Activity of Bacteriophage in Group of Lactic Streptococci. H. R. Whitehead and G. J. E. Hunter.—p. 337.
Agglutinability by Trypaflavine of Bacillus Typhosus and Its Relation to Vi Antigen. W. Hirsch.—p. 349.
Some Cytologic Features of Vaccinial Keratitis in Rabbit. A. J. Rhodes and C. E. van Rooyen.—p. 357.
Frozen Sections of Eyes. C. L. Oakley.—p. 365.
Histology of Normal Chorio-Allantoic Membrane of Developing Chick Embryo. R. D'Aunoy and Florence L. Evans.—p. 369.
Production of Toxin by Clostridium Edematiens (Bacillus Novyi). L. E. Walbum and G. C. Reymann.—p. 379.
Observations on Presence of Intestinal Epithelium in Gastric Mucosa. H. A. Magnus.—p. 389.
*Occurrence of Protective Antibodies in Syphilis. A. Beck.—p. 399.
*Interference Phenomenon in Relation to Yellow Fever and Other Viruses. G. M. Findlay and F. O. MacCallum.—p. 405.
Interrelationships of Staphylococcus Leukocidins. H. Proom.—p. 425.
Weight of Parathyroid Glands. J. R. Gilmour and W. J. Martin.—p. 431.
Malignant Tumors of Thyroid Gland. Dorothy M. Vaux.—p. 463.
Effect of Colchicine on Normal and Neoplastic Tissues in Mice. P. A. Clearkin.—p. 469.
Changes Induced by Estrone in Bulbo-Urethral (Cowper's) Gland of Male Mouse. H. Burrows.—p. 481.

Study of Intestinal Flora of Children.—In a series of children operated on for simple appendicitis, Blacklock and his colleagues found that coliform bacilli and other organisms were practically absent from the upper part of the small intestine. Such results were also obtained from a necropsy series of nonseptic cases. In another group of children dying of parenteral infections, coliform bacilli were increased in the duodenum and jejunum but were less abundant than in primary acute gastroenteritis, in which the coliform incidence at these levels reached a maximum for the series. No specific infecting organism was

recovered from the gastro-enteritis cases, in which the lesions in the organs were of a toxic nature and those in the intestine usually inflammatory, though at times minimal in view of the clinical severity. The incidence of coliform bacilli in the small intestine appeared to be rather higher in infants than in older children, though the differences observed cannot be regarded as established on the figures available. In certain cases elevation of body temperature seemed to increase the incidence of coliform bacilli in the small intestine, but the observations generally showed considerable discrepancy. In acute enteritis the p_H of the contents of the small intestine appeared to be slightly less acid than in normal subjects. Coliform bacteriophage was never found in the small intestine. Thus in primary gastro-enteritis the essential factor appears to be a breakdown in the normal physiologic functions, which maintain a relative sterility in the upper part of the highly absorptive small intestine. It is, however, the secondary pathologic conditions, largely toxemic in nature, which dominate the clinical and postmortem observations.

Occurrence of Protective Antibodies in Syphilis.—Beck examined fifteen serums and two cerebrospinal fluids of syphilitic persons and three serums of syphilitic rabbits by a quantitative in vivo method for the presence of protective antibodies against the syphilis spirochete. No evidence of such antibodies was found. The negative result may be due to an insufficient specificity of the antigens used. If the syphilis spirochete varied in its antigenic structure as the relapsing fever spirochete or trypanosomes do, the failure to demonstrate antibodies might be due to the unsuitability of the antigens used. But, according to observation in man, it is not very probable that such a variability of different immunologic types of human syphilis spirochetes occurs. Unlike as in rabbits, immunity in man seems to be a "panimmunity" directed against all strains of syphilis spirochetes (Kolle, 1926). In view of the results obtained it is maintained that no protective antibodies are demonstrable in syphilis. This, and the lack of demonstrable antibodies by in vitro methods, reported earlier, render it improbable that immunity in syphilis is based on a humoral mechanism. It seems that, as in tuberculosis, the protection against superinfection or reinfection of the previously infected syphilitic individual depends solely on an altered mode of reaction of the tissue cell itself against newly introduced spirochetes.

Interference Phenomenon in Relation to Yellow Fever.—Findlay and MacCallum observed that rhesus monkeys inoculated subcutaneously or intraperitoneally with a mixture of neurotropic and pantropic strains of yellow fever virus survive, while control monkeys similarly inoculated with pantropic virus alone die. When the neurotropic virus is inoculated twenty-four hours after the pantropic virus, there is no protection. Intracerebral inoculation of monkeys with a mixture of neurotropic and pantropic yellow fever viruses results in death from encephalomyelitis: control monkeys inoculated intracerebrally with pantropic virus die with liver necrosis and other lesions in the viscera. The subcutaneous inoculation of men with yellow fever immune serum and mixtures of neurotropic and pantropic yellow fever viruses gives rise to reactions similar to those induced by the neurotropic virus, while those induced by the pantropic virus are absent. The evidence therefore shows that the neurotropic virus protects against the pantropic yellow fever virus, but the pantropic virus does not protect against the neurotropic virus. The subcutaneous or intraperitoneal inoculation of mixtures of pantropic yellow fever virus and pantropic Rift Valley fever virus in rhesus monkeys resulted in the protection of seven out of eleven animals. The intraperitoneal inoculation of mice with mixtures of neurotropic yellow fever virus and pantropic Rift Valley fever virus caused a delay in the death of the mice and in a small proportion of cases protected them completely. This protective action was not seen if Rift Valley fever virus was given twenty-four hours before the inoculation of the yellow fever virus. A possible explanation of the interference shown by the neurotropic strain of yellow fever virus with the pathogenic action of the pantropic strains of yellow fever and Rift Valley fever is that, when certain cells are already occupied by actively multiplying virus particles, they cannot be invaded by certain other virus particles.

Journal of State Medicine, London

45: 125-186 (March) 1937

Iron-Deficiency Anemia Among Poor Classes in Aberdeen. H. W. Fullerton.—p. 125.
The Problem of the Rheumatic Child. H. L. Wallace.—p. 138.
Some Health Problems of London. G. E. Oates.—p. 161.
The Health of the City of New York in 1936. J. L. Rice.—p. 173.

Journal of Tropical Medicine and Hygiene, London

40: 65-76 (March 15) 1937

Investigation of Poisonous Constituents of Sweet Cassava (Manihot Utilissima) and Occurrence of Hydrocyanic Acid in Foods Prepared from Cassava. B. J. W. Turnock.—p. 65.
Contribution to Study of Etiology of Acute Rheumatism: Pneumococcus as Causal Agent. Najib Farah.—p. 66.

Lancet, London

1: 677-734 (March 20) 1937

*Heart Disease with Normal Rhythm Complicating Pregnancy: Series of 100 Cases. K. Harris.—p. 677.
Chemotherapy of Typhoid and Some Other Nonstreptococcic Infections in Mice. G. A. H. Buttle, H. J. Parish, M. McLeod and Dora Stephenson.—p. 681.
Effect of Compressed Air Baths on Vital Capacity in Emphysema. G. E. Beaumont and J. F. Dow.—p. 685.
Phonostethograph: New Method of Recording and Reproducing Sounds Heard on Auscultation. C. V. Henriques.—p. 686.
Encephalitis in Measles: Report of Five Cases with One Death and One Recovery After Convalescent Measles Encephalitis Serum. G. A. E. Barnes, J. C. Blake, J. C. Hogarth and M. Mitman.—p. 687.
Tumor Growth in Hypophyseal Dwarfism. B. Zondek.—p. 689.
*Solitary Metastasis in Spleen in Carcinoma Simplex of Right Breast with Extensive Local Spread. W. H. McMenemey.—p. 691.

Heart Disease with Normal Rhythm Complicating Pregnancy.—Harris has observed 100 pregnant women suffering from valvular disease of the heart with normal rhythm during pregnancy. Only three patients have been subsequently lost sight of; the remainder have been kept under observation for at least two years after delivery, and twenty of these have been followed up for four years or more. No patient died during the course of pregnancy or labor. In the management of such a case a careful investigation of the history of the patient's exercise tolerance before and during the early months of the pregnancy is of great importance. Early breakdown of exercise tolerance in a primipara is a grave sign, since death may occur soon after labor or congestive heart failure is likely to supervene with its attendant grave risks. In multiparous women the experience derived from the previous pregnancies is of great value, since the breakdown of exercise tolerance earlier and earlier in each successive pregnancy is a serious feature for the same reason. The subsequent mortality was greater in those patients in whom congestive heart failure occurred than in those in whom it did not, and particularly in the primiparas. When congestive failure developed early in the pregnancy the patients did well, possibly as a result of obstetric treatment; those in whom the failure developed late did badly, particularly if the failure had not cleared up at the time of delivery. A short interval between pregnancies increases the risk of congestive failure in a cardiac case. The incidence of premature delivery was increased in cases in which congestive failure developed during pregnancy, whereas it was not increased in the other cardiac cases. Patients with slight or no enlargement of the heart did better than those with moderate or considerable enlargement. There appeared to be no difference in the prognosis between cases of mitral stenosis, those of aortic regurgitation and those in which both these lesions were present. Pregnancy is contraindicated in those patients with heart disease with normal rhythm, who have ever had congestive failure, in whom the exercise tolerance broke down early in a previous pregnancy or in whom the heart is considerably enlarged. Termination by emptying the uterus should be undertaken as soon as the failure has been relieved by rest and other medical measures. During the pregnancy careful supervision and increased rest with admission to the hospital for at least two weeks before the onset of labor is advisable for the successful management of a case of heart disease complicating pregnancy.

Solitary Metastasis in Spleen in Carcinoma of Breast.—McMenemey cites a case of carcinoma of the breast with solitary metastasis in the spleen. The splenic tumor is the only abdominal metastasis and the only one which cannot be readily

explained on the basis of a lymphatic spread. The presence of this large growth in the spleen is further evidence against the view now partly discredited, but still upheld in part by Krumbhaar in 1927, that the spleen exerts a "specific antagonistic action" against carcinoma cells, a view in favor of which there has been some experimental work.

Medical Journal of Australia, Sydney

1: 387-418 (March 13) 1937

Prevention of Nervous and Mental Disorders: Some Possibilities and Limitations. J. F. Williams.—p. 387.
*Metropolitan and Rural Incidence and Distribution of Acute Rheumatism and Rheumatic Heart Disease in New South Wales: Part I. K. Maddox.—p. 394.
Epithelioma of the Lip: Glandular Involvement and the "Wait and See" Method. E. S. Meyers.—p. 399.
Establishment of Central Health Authority in New South Wales. W. G. Armstrong.—p. 400.

Acute Rheumatism and Rheumatic Heart Disease in New South Wales.—Maddox divides his article into three parts: the general incidence of cardiac rheumatism in South Wales, the distribution of rheumatic heart disease in rural South Wales and the distribution of rheumatic fever in the metropolis of Sydney. He determined the admission rate for rheumatic valvular disease to seven hospitals for ten years and compared this with similar public hospitals from other countries. The percentage of total hospital admissions appeared to vary between 0.27 and 0.39 for adult hospitals to 0.7 for a large children's hospital. Rheumatic valvular lesions formed 0.47 per cent of the total admissions. Postmortem evidence of rheumatic valve injury, observed at the Royal Prince Albert Hospital for a similar period, was found in 1.5 per cent of the total necropsies. In Adelaide a rate of 3.8 per cent has been recorded. The survey results in the general conclusion that New South Wales is fortunate in occupying an intermediate position with regard to the incidence of cardiac rheumatism, since the general figure for the whole population of New South Wales, from 0.3 to 0.6 per cent, falls far short of the prevalence in the Old World or northern United States but is considerably more than is found in the tropics. The general incidence of rheumatism for all rural areas examined was 2.7 per cent; of organic heart disease of rheumatic character, 0.6 per cent. Rheumatism is distributed fairly evenly over New South Wales, while rheumatic heart disease is found more on the tablelands and slopes than in the coastal regions. In the coastal mountain range (Blue Mountains) and the areas close to its inland slopes there is a higher incidence of organic cardiac rheumatism. Certain coastal areas characterized by salt water lagoons are severely affected. In dusty areas with low annual rainfall of high seasonal concentration, and with high summer temperatures the incidence is low. Urbanization in New South Wales, at least with one possible exception (Lithgow), does not appear to raise the incidence of cardiac rheumatism. No increase is found in areas under close artificial irrigation and of high damp ground. Similarly, flat coastal areas abundantly intersected by rivers and with a high rainfall are usually free of cardiac rheumatism. As rheumatic fever is not a notifiable disease, it is impossible to make an exact estimate of its distribution within the city of Sydney. The common experience of all observers has been that it is almost entirely a disease of the public hospital class of citizen from the poorer industrial quarters. The records of the larger general hospitals of Sydney show that the slum areas and others most heavily populated by members of the public hospital community provide most of the cases. The slums, however, in no sense approach the character of those in the poorest parts of the larger European cities. The total number of patients plotted in this way amounted to 800. No definite relationship to known damp areas, either damp ground or poorly drained areas, could be established.

Japanese Journal of Obstetrics & Gynecology, Kyoto

20: 1-98 (Jan.) 1937

Study on Hemostatic Mechanism of Irradiation of Spleen with Hard X-Ray for Hemorrhagia Uteri. M. Ikegami.—p. 2.
Roentgenpelvimetry and Its Application in Obstetrics. A. Yamabe.—p. 52.
Biologic Action of Metal Surfaces: I. Influence of Surface of Lead on Emigration Power of Wandering Cells from Spleen of Chicken Embryo. K. Tsukimoto.—p. 91.

Bulletin Médical, Paris

51: 201-220 (March 27) 1937

Therapeutic Classification and Orientation of Dyspepsias. G. Lyon.—p. 203.
Diagnosis of Chronic Cholecystitis Without Lithiasis. A. Cain.—p. 207.
*Submucous Lipomas of the Stomach. M. Bariéty and G. Brouet.—p. 209.

Submucous Lipomas of the Stomach.—Bariéty and Brouet draw attention to lipomatous tumors of the gastro-intestinal tract ranging from 3 or 4 mm. to 6 cm. in diameter. They sometimes occur in clusters or are dispersed. They may be oval and pedunculated, disklike or pear shaped. The authors mention a case of intestinal lipoma which was traumatized by a foreign body with resulting ulceration. It may also happen that its internal or adjacent blood supply becomes interfered with, resulting in edema, congestion, ulceration, hemorrhage, leukocytic infiltration and necrosis. Ulcerations are generally small, mostly the size of a lentil. Of all the gastric tumors lipomas are rarest, occurring more frequently in men than in women and mostly beyond the age of 40. Lipomas may remain without symptoms unless they are complicated by muscular disorders, ulcerations or pyloric obstruction. In these cases there is slight pain intensity and a feeling of emptiness in the stomach, of heaviness or of painful cramps as in ulcer; in most instances they resist all therapeutic efforts. The authors observed the absence of free hydrochloric acid after a test meal. Roentgenologically they are mostly confused with other benign tumors, perhaps because of their small size. A certain degree of pyloric stenosis and gastric residue may lead to the diagnosis, which will have to be differentiated from true pyloric stenosis, cancer, ulcer or simple dyspepsia. A serologic examination will eliminate syphilitic gumma. In the face of the difficulties of arriving at a diagnosis the treatment cannot be but symptomatic, except for stenosis and hemorrhage. In these the changes of the gastric mucosa may become pronounced and frequent hemorrhage will necessitate a surgical intervention. Technical difficulties will arise in diffuse lipomatosis and when multiple exereses must be performed.

Bull. et Mém de la Soc. Méd. des Hôpitaux de Paris

53: 353-402 (March 22) 1937. Partial Index

*Blood Density in Tuberculosis and Its Relation to Arterial Tension and Size of Heart. A. Ravinia, Domart, Orinstein and L. Brouillaud.—p. 356.
Pulmonary Paraplegic Cancer. Monier-Vinard and M. Brunel.—p. 358.
Amebic Nodular Hepatitis: Case. A. Gosset and R.-A. Gutmann.—p. 365.
*A New Spirochetosis. E. Lesné, J. Troisier and H. Bénard.—p. 368.
Pseudo-Hodgkin's Disease in Pulmonary Mediastinum and Bones: Terminal Tuberculosis. M. Lœper, A. Lemaire and A. Varay.—p. 374.
Severe Hepatonephritis in Myasthenia. N. C. Vasilesco.—p. 378.

Blood Density in Tuberculosis.—Ravinia and his associates have examined the blood of forty tuberculous and twenty persons with other disorders following a few days of rest. They mix equal parts of blood taken from a fasting patient and distilled water in a small flask and place it in an incubator for a few seconds. It is then weighed. The authors have thus determined that the blood density in tuberculous patients is decidedly lower than that of others (1.046 to 1.051). At the same time they have established the fact that the heart of patients with pulmonary tuberculosis shows smaller dimensions. This may be explained by secondary changes like adhesions which are, as the case may be, capable of increasing or diminishing the dimensions of the heart. Added to this is also a lower arterial blood pressure in tuberculous patients. As a corollary they also found that the blood density in women is slightly lower than that of men, and that hypertension goes mostly with relatively heavier blood.

A New Spirochetosis.—Lesné and his associates observe that the domain of the spirochetes is increasing every year. In a patient, aged 13, with fever oscillating between 100 and 102 F. and lasting for three weeks, the authors isolated spirochetes, from 2 to 3 microns long, presenting from 2 to 10 spirals and a thickness of from 0.25 to 0.4 micron. They have great mobility and are easily stained by methylene blue, gentian violet and fuchsin. They thrive best in 4 parts of Martin's bouillon with 1 part of blood. A monkey tested with this culture responds in about four days with a thermic reaction of 104 F., lasting for two days without visceral symptoms. The spirochete is a pathogenic saprophyte showing distinct charac-

teristics of culture and virulence similar to the spirochetes described by Pons (Spirochaeta sinensis) in 1923 but different only in time of recovery.

Mémoires de L'Académie de Chirurgie, Paris

63: 413-431 (April 7) 1937

*Pure Bone in Pegging Diaphysial Fractures. F. Neuman.—p. 431.
Tomography in Diagnosis of Pulmonary Lesions: Medicosurgical Interest in This Method. E. Bernard.—p. 446.

Pure Bone in Pegging Diaphysial Fractures.—Neuman maintains that metallic osteosynthesis has still many postoperative complications in spite of all technical improvements. He gives the history of six diaphysial fractures of long bones with overriding fragments. Under general anesthesia the two fragments are freed from interposed soft tissues and a piece of beef bone, 8 cm. long and 1 cm. wide, from which all fat and albumin have been removed, is inserted in the medullary cavity of the inferior fragment. The upper fragment is then manipulated so as to slip over the protruding part of the peg. This operation can be done in a few minutes without any difficulty. The wound is closed without drainage and a cast is applied. Among the six patients was a boy, aged 5, with a fracture of the lower radius and ulna successfully treated by pegging. In all cases exact coaptation and quick callus formation was achieved. The peg is gradually absorbed.

Paris Médical

1: 241-268 (March 20) 1937

Epitheliomas Developed on Naevi Pigmentosi and Pigmented Epitheliomas. H. Halkin.—p. 241.
Endometriosis: Clinical Signs and Pathogenic Theory. G. Gricouroff.—p. 249.
*Teleroentgen Therapy of Cancer. P. Cottenot and E. Chérigié.—p. 262.

Teleroentgen Therapy of Cancer.—In the treatment of deep-seated cancers with possible metastases, Cottenot and Chérigié utilized a greater focus-skin distance, higher voltage and more filtration, realizing a more equal distribution of rays over the surface of the fields. By increasing the kilovoltage to 200 they reached a greater depth, but the gain became negligible beyond 200 kilovolts. One mm. of copper improves the ratio of penetration about 13 per cent as compared with corresponding thicknesses of aluminum. The increase from 1 mm. of copper to 2 mm. is much less practical. Increasing the focus-skin distance from 1 meter to 2 meters affords about 6 per cent increase in the ratio of depth penetration given the same filtration. With increased distances, the intensity of the rays is the same in the middle as at the periphery of the field. It is thus possible to administer from 2,000 to 3,000 roentgens per field, utilizing from four to six fields and giving from 250 to 450 roentgens weekly. For fields 35 cm. in diameter a focus-skin distance of 70 cm. (semiteleroentgen therapy) is enough to destroy the cancer cells, while the defense elements of the body are imposed on as little as possible. Much different is the teleroentgen therapy applied by Mallet. His fields are from 40 to 50 cm. in diameter, so that two of them suffice to irradiate the body. His tension is from 180 to 300 kilovolts and filtration from 0.5 to 1 mm. of copper, giving not more than from 1,000 to 1,200 roentgens per field and necessitating about sixty or eighty treatments. But this method, although it gives a more homogeneous irradiation, has an injurious influence on the hematopoietic organs, because of its extended action. While it sterilizes the young cancer cells, it leaves the older cells almost intact. The semiteleroentgen therapy, as practiced by the authors, has given good results in bony metastases and cancers of the breast and uterus, but the results on the esophagus were less favorable.

Presse Médicale, Paris

45: 465-488 (March 27) 1937

Constitution and Function of Surgical Departments. A. Gosset, P. Hauduroy and J. Gosset.—p. 465.
*Action of Carbonic Acid and of Tapwater Baths of 91.5 F. on Gas Metabolism and Peripheral Circulation. M. André.—p. 469.
Combined Action of Carbonic Acid Baths and Oxygen Inhalation During Voluntary Apnea. R. Maréchal.—p. 471.
Algogenic Vasculotissular Reactions. L. Alquier.—p. 473.

Action of Carbonic Acid Baths.—A carbonic acid bath when taken at a temperature of 91.5 F. lowers the systolic and diastolic blood pressure during the first few minutes and later raises it. It brings about a dilatation of skin capillaries, retards the pulse and increases the diuresis. André investigated its action on general metabolism and peripheral circulation. He had seven subjects between the ages of 24 and 47 years on whom he conducted his experiments, choosing about four hours after the last meal as the suitable time. He observed that the volume of expired air was increased 23 per cent. If the respiratory quotient was 0.88 before the bath, it rose to 1.16 during the bath. The average metabolic rate was increased 9.5 per cent during the bath. Briefly, a carbonic acid bath at 91.5 F. accelerates the peripheral circulation through absorption of carbon dioxide through the skin and its elimination by expiration. A bath of tap water of the same temperature tends mostly to slow down circulation. The p_H drops from an average of 7.41 to an average of 7.38 and this is usually accompanied by a surplus of carbon dioxide in the blood (from 50.89 to 53.36 per cent). In spite of this drop of p_H the average rate of oxyhemoglobin is raised from 82.5 to 86 per cent. The main argument against these figures would be the possible inhalation of carbon dioxide given off by the bath. But the author provided his subjects with pure air from without by hyperventilation and the figures obtained were the same. It is essentially the anhydride of the carbonified water, which, penetrating the immersed skin, increases the carbon dioxide contents of the venous blood.

45: 489-504 (March 31) 1937

Congestive Tuberculous Focus Rapidly Curable. J. Minet, H. Warembourg and Delannoy.—p. 489.
Skeletal Anomaly of Elbow Joint: Sesamoid of Ulna. Kienböck and Desenfans.—p. 491.
*Clinical Value of Symptom of Sympathetic Origin in Tumors and Inflammatory Processes of Retroperitoneal Space. E. Hesse.—p. 492.
Spontaneous and Induced Pleurisy with Eosinophilia. P. Pavie, P. Lefèvre and G. Rossignol.—p. 494.

Tumors of Retroperitoneal Space.—In 1929 Hesse described a triad of symptoms of retroperitoneal tumors and their influence on the sympathetic nerves of the corresponding lower limb. These symptoms are lowering of the temperature, excessive sweating and, during the period of nervous excitation, exaggerated pilomotor reflex in the lower limb which corresponds to the side of the tumor. During the period of advanced destruction, when the sympathetic nerve is either inhibited or paralyzed, the temperature of the limb is again increased, the sweating stops and the pilomotor reflexes are arrested. These symptoms are important when the tumor is in its early stage during which the diagnosis and the localization of the growth can be made with no other methods. The difference in temperature is best measured at the toes or at the back of the foot. By merely laying the hand on both feet, the difference in temperature can often easily be made out. For more minute comparisons, comparative thermometry will have to be applied. By means of this method it is possible to tell whether the process is in its initial or its advanced stage. The temperatures of both limbs are traced daily and the day on which the two temperatures are the same indicates the passage from the state of nervous excitation to that of inhibition or paralysis. The author named this crossing "calorimetric scissors." These symptoms are verified on eight patients, in some of whom the difference of temperature was often more than 5 degrees and well noticeable to themselves.

Schweizerische medizinische Wochenschrift, Basel

67: 349-376 (April 24) 1937

Diseases of Nervous System Caused by Deficient Nutrition. E. Mellanby.—p. 349.
*Etiologic Significance of Influenza Bacilli in Bronchiectasis. G. Elkeles.—p. 356.
Pregnancy Ileus: Case. S. Bass.—p. 359.
Digestive Disturbances Supervening After Artificial Pneumothorax. G. Zenguinoff.—p. 362.
Rapid Success with Ramel's Sheep's Blood Method in Special Case of Lupus Vulgaris. M. A. Schoch.—p. 362.
Peculiar Cutaneous Disorders After Treatment with Vitamin B_1. F. Stocker.—p. 363.

Significance of Influenza Bacilli in Bronchiectasis.—Elkeles has made bacteriologic tests on cases of bronchiectasis with and without abscess formation which, although greatly resembling tuberculosis, could not be verified as such. They were refractory to internal therapeutic measures. In such cases

the influenza bacillus was the predominant bacillus so often that the author ascribes to it an etiologic rôle in nontuberculous bronchiectases.

Clinica Ostetrica, Rome

29: 129-192 (March) 1937

*Congo Red Test in Differential Diagnosis of Adnexitis and Tubal Abortion. M. Geyer.—p. 129.
Grave Vomiting, Chloropenia and Hyperazotemia in Pathogenic Vicious Circle in Pregnancy. E. Fronticelli.—p. 134.
Rupture of Malformed Uterus in Labor: Case. A. Fortunato.—p. 138.

Differential Diagnosis of Adnexitis and Tubal Abortion.—Geyer advises the use of the hemostatic test of congo red for the differential diagnosis of adnexitis and tubal abortion causing metrorrhagia. The test consists in the administration of an intravenous injection of 10 cc. of a 1 per cent congo red solution each day for three consecutive days. If metrorrhagia is caused by adnexitis, it stops immediately after administration of the congo red injections. If it is caused by tubal abortion, the treatment fails. The treatment is harmless and can be given to ambulant patients. Four cases are reported.

Lattante, Parma

8: 145-216 (March) 1937

*Natural Antistaphylococcic Immunity in New-Born Infants and in Children. G. C. Bentivoglio and S. Moschini—p. 153.
Infectious Adenopathic Mondymphocytosis: Cases. F. Cantarutti.—p. 184.
Hemiplegia in Heart Disease: Case. Leonida Ziletti.—p. 190.

Natural Antistaphylococcic Immunity.—Bentivoglio and Moschini state that a degree of natural antistaphylococcic immunity may exist in infants and in children of different ages. Immunity in these cases is proved by the presence in the blood serum of staphylococcic antitoxin, which can be determined by the hemolytic method. The amount of staphylococcic antitoxin in the blood serum of new-born infants is the same as that in the blood serum of their mothers. Passive immunity of maternal origin diminishes rapidly after birth and in two or three months the staphylococcic antitoxin almost disappears from the blood. It again increases, however, after this time up to the age of 7. The amount of staphylococcic antitoxin in the blood serum of children from 7 years of age on is the same as that in the blood serum of adults; that is, about 1 unit of antitoxin for each cubic centimeter of blood serum. The amount of staphylococcic antitoxins in the blood serum of children is greater in the course of staphylococcic diseases, or shortly after their occurrence, than during the course or after the occurrence of diseases other than staphylococcic. Natural antistaphylococcic immunity is due to previous contagions or infections, which evoluted according to several individual and other factors that were prevailing at the time the infection took place, so that a diagnosis as to the origin of the infection is not made at that time. The quantitative behavior of staphylococcic antitoxin in the blood serum shows an important phase of the clinical problem of natural antistaphylococcic immunity.

Pathologica, Genoa

29: 135-179 (April 15) 1937

*Total Creatinemia Following Ligation of Splenic Artery: Experiments. F. de Victoriis-Medori.—p. 135.
*Is There a Plurality of Donovan's Virus? G. Sangiorgi.—p. 140.
Malignant Granuloma of Hypophyseal Location: Case. A. Cacciamali.—p. 142.
Behavior of Brain in Experimental Catatonia in Dogs. E. Mondio and F. Pino.—p. 148.
Amyloid Degeneration and Splenectomy: Experiments. G. S. Niosi.—p. 155.

Creatinemia Following Ligation of Splenic Artery.—De Victoriis-Medori made determinations of the creatine bodies in the blood of rabbits following ligation of the splenic artery. He found a temporary lowering of the total creatinemia, which returns to normal figures in about thirty days after the operation. According to the author the hypocreatinemia is relative. It is due to diminished concentration of creatine bodies in the blood subsequent to the production of hydremia, which follows ligation of the artery, with consequent rupture of the ratio between the liquid and solid parts of the blood. The statement is proved by the fact that ligation of the splenic artery is followed by a temporary diminution of the index of refraction of the blood which parallels that of the creatine bodies. A direct influence of the spleen on the creatine bodies does not seem to exist, according to the results of the author's experiments.

Plurality of Leishmania Donovani.—Sangiorgi found a great variety in the morphology of Leishmania donovani during bacteriologic studies of splenic material in a case of kala-azar in an adult. He wonders whether there are several strains of Leishmania donovani and, in this case, whether the different morphology of several strains is related to the virulence of the strain and to its selectivity for adults or children. In this connection, he advises the cultural and biologic studies of Leishmania donovani. The author's study does not include Leishmania infantum, which etiologically is not identical with Leishmania donovani.

Bol. de la Soc. Cubana de Pediatría, Havana

9: 87-118 (March) 1937

*Determinations of Chlorides in Blood Plasma and Globules in Prognosis and Treatment of Acute Intestinal Toxi-Infectious Syndrome in Infants. F. Hurtado Galtés.—p. 92.
Parrot Disease in Infant: Case. J. Pedrera.—p. 104.

Chlorides in Blood in Acute Intestinal Toxicosis.—Hurtado Galtés advises repeated determinations of the chlorides in the blood plasma and globules and of the alkali reserve, early in the course of acute intestinal toxicosis in infants. The normal chloride globuloplasmatic coefficient is 0.5 and corresponds to 0.5 volume in the Van Slyke scale for the alkali reserve. Higher and lower figures than that of 0.47 for the globuloplasmatic coefficient show, respectively, hyperchloremia (acidosis) or hypochloremia (alcalosis). Early treatment is of importance. Infants suffering from hyperchloremia are given intramuscular injections of a 2 per cent sodium bicarbonate solution, or intravenous injections of a 4 per cent solution of the same substance. The treatment is associated with the administration of an isotonic solution of dextrose if the increase of the coefficient is due to increase of the chlorides in the globules over those in the plasma. It is associated with the administration of Ringer's solution if the chlorides in the plasma are greatly diminished. When the increase of chlorides in the globules and the plasma is parallel, salt solutions are not resorted to. The patient is given liberal amounts of dextrose solution for rehydration and insulin (no more than 2 units of insulin for each 4 Gm. of dextrose). Infants suffering from hypochloremia are given liberal amounts of Ringer's solution and hypertonic solution of sodium chloride. By administering the treatment according to proper indications, the development of the almost fatal syndrome that complicates alkalosis erroneously treated by alkali is prevented. A drop by drop intravenous instillation is the best method for administering solutions of dextrose or sodium chloride. Direct transfusion is also of value.

Chirurg, Berlin

9: 241-288 (April 1) 1937

Cancer and Lay Instruction. F. König.—p. 241.
Benign Giant-Cell Tumors of Bones. G. E. Konjetzny.—p. 245.
Genesis of Gastric Ulcer and Its Therapeutic Indications. K. H. Bauer.—p. 250.
*Value of Roentgen Demonstration of Free Gas in Peritoneal Cavity in Perforation of Ulcer. G. Petrén.—p. 259.
Scalenus Anticus Syndrome and Its Treatment by Scalenotomy. C. Henschen and H. Heusser.—p. 266.
New Advances in Control of Postoperative Thrombo-Embolism. R. T. von Jaschke.—p. 274.
Medical Procedures Against Will of Patient. Warneyer.—p. 279.

Free Gas in Peritoneal Cavity.—According to Petrén, roentgenologic examinations for the last five years at the Surgical Clinic of Lund of patients presenting symptoms of acute abdominal disease demonstrated the presence of free air in the peritoneal cavity in about two thirds of the cases of perforation of gastric or duodenal ulcer. Free gas can be demonstrated as early as five hours after the perforation. This roentgenologic sign was also present in a number of cases of perforation of gastric and colonic cancer and of perforations of the small intestine. The failure to obtain the sign does not rule out the existence of the perforated ulcer, since in one third of the cases the sign was absent. The diagnosis of the perforated ulcer in the cases in which the roentgenologic sign was positive presented no diagnostic difficulty and could have been arrived at

without resorting to roentgenologic examination. The author does not recommend routine employment of the method in cases of acute abdominal disturbance in which perforation is not suspected. The roentgenologic examination for free gas in the peritoneal cavity can be made with the patient lying down in the left lateral position. Of forty cases of perforation of ulcer examined roentgenologically for the presence of free air, twenty-seven were positive and thirteen were negative. The roentgenologic examination was of determining diagnostic value in only six. In a group of forty-two cases of perforation of ulcer in which no roentgenologic examination was made, the diagnosis presented no difficulty. The demonstration of free gas in the peritoneal cavity was thus of diagnostic value in six out of eighty-two cases. The author feels that the practical value of the method should not be overestimated. In about 10 per cent of the cases of perforation of ulcer the diagnosis may present difficulties, and it is in these that the roentgenologic demonstration of free gas in the peritoneal cavity is of determining value.

Deutsche medizinische Wochenschrift, Leipzig

63: 617-660 (April 16) 1937. Partial Index

*Influence of Change of Weather on Normal Human Organism. J. Kühnau.—p. 617.
What Type of Nervous Patients Are Suitable for Treatment in Seaside Resorts? H. Curschmann.—p. 620.
Indications and Contraindications in Prescription of Natural Carbon Dioxide Baths. R. Wachter.—p. 622.
Treatment of "Status Asthmaticus." J. Diener.—p. 624.
Does Radioactivity of Ground and Air Have Climatotherapeutic Significance? H. Israel-Köhler.—p. 632.

Effects of Change of Weather on the Human Organism.—Everyday experiences show that noticeable reactions of the human organism take place only in case of weather changes. Kühnau says that the manner in which weather changes influence the organism is extremely complicated. A part of the effects of weather changes on the organism—drastic changes of the air moisture, temperature and wind velocity—can be explained by a sudden demand on the temperature regulation of the organism. In "weather sensitive" subjects, however, weather changes become noticeable also outside the temperature regulation, for instance in sudden metabolic changes. Sensitive persons may even feel changes in the weather in advance. These phenomena have not been completely explained as yet. Individual persons react to stimuli of meteorological changes in different ways and with different intensities. Some of the influences on the human organism can be explained by a modification of the sympathetic nervous system. Children and persons of the leptosome type are frequently irritable and restless during the passage of an arctic front but drowsy and somnolent during the passage of an equatorial front. The author cites Petersen's opinions about the effects on the organism of the invasion of the arctic front (anticyclone) and of the equatorial front (cyclone) and discusses the influence exerted by changes in air bodies on the blood pressure, the basal metabolism and the morphology and chemistry of the blood. The author thinks that there is a tendency to underestimate the influence exerted by the meteorological conditions on the healthy individual and that a better knowledge of the physiologic actions of the weather will aid in the understanding of its rôle in the development of diseases.

Klinische Wochenschrift, Berlin

16: 513-552 (April 10) 1937. Partial Index

Animal Experiments on Action of Di-Iodotyrosin (3.5 Di-Iodo-4-Oxyphenylalanine) on Lactation. P. Grumbrecht and G. von Düsterlho.—p. 513.
Electrocardiographic Aspects of Infectious-Toxic Impairment of Myocardium. B. Weicker.—p. 516.
Clinical Experiences with Takata-Ara Reaction, Its Relation to Bilirubin Content of Serum and to Albumin-Globulin Quotient. H. Gohr and G. Niedeggen.—p. 522.
*Mites as Endoparasites in Urinary Passages. R. Pfaffenberg and J. Konischewski.—p. 527.
Clinical and Experimental Pathology of Inflammation. L. Hofbauer.—p. 529.
Evaluation of Whooping Cough Therapy. U. Grüninger and W. Kemper.—p. 531.

Mites as Endoparasites in Urinary Passages.—Pfaffenberg and Konischewski point out that the theory of true endoparasitism in the gastro-intestinal tract seems to be contradicted by the fact that it has never been possible to demonstrate living mites in the feces. To be sure, the feces of dogs that had been experimentally infected with mites have been found to contain living mites, but even the occasional appearance of living mites in the stools would not necessarily indicate parasitic action. Whereas a mite-endoparasitism of the intestinal tract has not been definitely proved, there seems to be evidence of mite-endoparasitism in the urinary tract. After reviewing the literature on the occurrence of mites in the urinary tract, the authors report two cases of their own observation. One concerned a baker, aged 26, who complained of pains in the hypogastric region and in the kidney of the right side. The patient had a nephritis that was complicated by a paranephritic abscess. Mites of the type Tyroglyphus were detected in urine that had been withdrawn under sterile conditions from the bladder and the ureter. The second patient was the wife of the first patient. She too had living mites of the same type in the urine that had been withdrawn from the bladder and the ureters as well as in the urine that was voided spontaneously, but she had no symptoms of disease. In order to determine whether perhaps bakers are especially exposed to mite-endoparasitism of the urinary tract, studies were made on 119 bakers. The tests that were made under absolutely sterile conditions always were negative. From this it is concluded that the occupation of the first patient was of no significance for the infestation with mites.

Medizinische Welt, Berlin

11: 415-450 (March 27) 1937. Partial Index

Vitamin Therapy in Surgical Disturbances. H. J. Lauber.—p. 415.
*Treatment of Pseudarthroses. B. Martin.—p. 420.
Results and Technic of Whitehead's Operation for Hemorrhoids. A. Herrmannsdorfer.—p. 423.
Surgery of Gastric Ulcer. C. M. Behrend.—p. 425.
After-Treatment of Injuries of Elbow Joint. F. Reckling.—p. 427.
Orthopedic Treatment of Permanent Injuries of Upper Extremities. F. Kirschner.—p. 430.

Treatment of Pseudarthroses.—Martin tried to differentiate between retarded healing of a fracture and pseudarthrosis, for he considered this differentiation important for the treatment. He thinks that, if the callus at the end of the fracture is still cloudy, without sharp outlines and without structure, the callus formation is still in progress and that cloudy, more or less connected shadows indicate the same, provided continuous roentgenologic control examinations have not already revealed retrogressive processes. He emphasizes that the healing of fractures differs greatly as regards duration as well as manner and extension of callus formation. This is proved by continuous roentgen controls. Considerably retarded callus formation justifies Beck's drilling of the bone. This method is simple and highly effective. He admits that in the healing of a fracture all parts of the bone play a part: the marrow, the corticalis and the periosteum, but he regards the marrow as of primary importance and shows that the great value of Beck's drilling lies in the fact that it establishes a connection between both marrow cavities. He emphasizes the value of continuous observation of a healing bone fracture. He tells of a patient with pseudoarthrosis who has been under his observation for twenty years. In numerous roentgenograms he was able to observe the development and cure of the first pseudarthrosis, a relapse and its cure, and finally the regeneration of the bone defect at the site from which the transplantation had been taken.

11: 451-486 (April 3) 1937. Partial Index

Rhythms in Life of Woman. H. Guthmann.—p. 451.
Diameter of Erythrocytes in Nervous Disorders, Particularly in Multiple Sclerosis. H. Maier and Irmgard Schuh.—p. 456.
New Methods of Roentgentherapy in Inflammatory, Endocrine and Nervous Disturbances. A. Püschel.—p. 459.
Lymphogranuloma: Internal Treatment. V. Schilling.—p. 463.
*Irradiation in Lymphogranuloma. W. Baensch.—p. 464.
Orthopedic Treatment of Permanent Impairments of Upper Extremities. F. Kirschner.—p. 466.

Irradiation in Lymphogranuloma.—Baensch, in discussing the ray treatment of lymphogranuloma, admits that this method is not a causal one and can influence only the secondary manifestations. His experiences with ray treatment are based on seventy-eight cases in which the treatment has been completed and on ten in which treatments are still being given.

Roentgen or radium treatment is resorted to again and again, because the medicinal treatment fails to produce satisfactory results. Some authors recommend small and others massive doses. On the basis of his own observations, he advises small doses to begin with, for the smaller the initial doses, the longer will the irradiation remain effective. Moreover, it is characteristic for lymphogranuloma that it reacts promptly to small doses. After giving the first focal dose of 150 roentgens, the author tries to secure for the patient climatic or heliotherapy, as he saw favorable effects from heliotherapy, particularly during the first and second stages of lymphogranuloma. To be sure, if lymphogranuloma takes a fulminant course, heliotherapy is ineffective, for these cases usually terminate fatally within a few months. Frequently, however, heliotherapy is followed by a latent stage, which may last from several months to three years. After that the glandular swellings recur either in the same regions or in adjoining ones. During the second stage it is generally advisable to administer about 300 roentgens to each field. The author observed in many cases that the glandular swellings as well as the fever subsided between the fourth and sixth days after the irradiation. For this reason he did not irradiate the same region after shorter intervals but waited at least six or eight days. Occasionally considerable improvement is still obtained during the second stage, but the glandular swellings are usually refractory to the influence of rays during the third stage. In case of superficial glandular swellings, radium treatment accomplishes about the same as does roentgenotherapy, but if deeper lying lymph nodes are involved, particularly the mediastinal and bronchial ones, roentgen irradiation is usually preferable.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

104: 257-380 (Feb.) 1937. Partial Index

*Percutaneous Puncture of Hydramnion During Pregnancy. A. Mayer.—p. 259.
*Simultaneous Intra-Uterine and Extra-Uterine Pregnancy. H. O. Neumann.—p. 265.
Further Experiences with Ray Therapy of Carcinoma of Uterine Cervix. O. Nebesky.—p. 275.
Chronic Inflammation of Pelvic Connective Tissue. E.-A. Mueller.—p. 311.
Symphysiotomy. H. Heuck.—p. 316.
Course of Delivery in Old Primiparas. H. Döring.—p. 322.

Percutaneous Puncture of Hydramnion During Pregnancy.—Mayer directs attention to the fact that a severe hydramnion may cause considerable difficulties, such as severe dyspnea. If the signs of congestion become too severe, evacuation of the over large uterus by artificial termination of the pregnancy may become necessary, but the author suggests puncture of the hydramnion through the abdominal walls as another possibility. He thinks that the measure is indicated in serious signs of congestion with dyspnea. The technic is comparatively simple. The skin is disinfected and the puncture is made with a sterile trocar. The author usually makes the puncture about midway between the symphysis and the umbilicus, in the midline, because here are the fewest vessels and normally there are no intestinal loops in this region, so that the danger of damaging the intestine is excluded. In order to avoid injuries of the urinary bladder the puncture is preceded by catheterization. Local anesthesia is used. The amount of amniotic fluid withdrawn varies between 850 and 3,750 cc. The immediate result of the puncture was always good. The further course of the pregnancy varied. In order to avoid labor pains, morphine or some other opium preparation was administered. Mild labor pain appeared in two cases but subsided again. In five cases delivery took place after one, three, six, eight and ten days, respectively, but in the other cases up to ten weeks elapsed before the termination of the pregnancy. The author never observed damage to the child.

Simultaneous Intra-Uterine and Extra-Uterine Pregnancy.—Neumann reports the clinical histories of three cases of simultaneous intra-uterine and extra-uterine pregnancy. In the first woman intra-uterine pregnancy concurred with a tubal pregnancy. The second patient had an intra-uterine and an ovarian pregnancy. In the third woman pregnancy existed simultaneously in the main horn of a uterus unicornis and in the atretic accessory horn.

Münchener medizinische Wochenschrift, Munich

84: 561-600 (April 9) 1937. Partial Index

Experiences with Radiotherapy of Malignant Tumors of Upper Air and Food Passages. R. Schinz and A. Zuppinger.—p. 561.
Electrogymnastics in Treatment of Myoparalyses and Myasthenias. J. Kowarschik.—p. 564.
*Borderline Rays in Treatment of Lupus. H. L. Bamberg and P. Kröker.—p. 569.
Apparatus for Compression Massage. Schede.—p. 574.
Epidemiology of E-Dysentery. F. Hoder.—p. 575.
Dangers of Wilde's Incision in Otogenic Abscesses of Soft Parts. O. Holm.—p. 576.

Borderline Rays in Treatment of Lupus.—Bamberg and Kröker report their observations on several hundred patients with lupus. After discussing the reaction of the tissue to the borderline rays, they point out that failure of this treatment is frequently caused by a faulty technic. They work with 9 and 10 kilovolts and 10 milliamperes. The half layer value amounts to from 0.0185 to 0.02 mm. of aluminum. The focus skin distance is between 2.5 and 5 cm. In order to be able to apply the large doses of rays required for the strong skin reaction without impairing the curative action, efforts were made to combine the borderline ray therapy with other methods; namely, with a preliminary irradiation with red rays and with the application of a tuberculin ointment. The combination therapy is employed in the following manner: After the crusts and scabs have been removed from the lupus focus, a small amount of tuberculin ointment is rubbed in. Then red rays are applied for fifteen minutes and this is followed by treatment with borderline rays. Whereas formerly the initial dose of borderline rays had to be from 2,000 to 2,500 roentgens, the combination treatment makes it possible to reduce it to from 1,000 to 1,500 roentgens. This dose is also generally adhered to for the later irradiations; occasionally it is increased to 2,000 roentgens. Several weeks elapse before the first reaction subsides. After that, the second irradiation is given. A therapeutic cycle, that is, the treatment required for a temporary cure of a lupus focus, consists of from 15,000 to 20,000 roentgens. The described combination therapy of lupus prevents the application of large doses of rays and with that, ray injuries. The method is an inexpensive and ambulatory treatment.

Wiener klinische Wochenschrift, Vienna

50: 395-426 (March 26) 1937. Partial Index

Pathology of Peripheral Vessels. H. Chiari.—p. 395.
Antihormones. J. Bauer and E. Kunewalder.—p. 399.
*Are Changes in Former Technic of Vaccination Justified? M. Kaiser.—p. 401.
*Sedimentation Speed as Differential Diagnostic Aid in Cerebral Disorders. Edith Singer and E. Edel.—p. 406.
Actions of Estrogen on Skin in Cutaneous Administration. Histologic Studies on Infantile and Senile Rats. H. Kun.—p. 408.
Clinical Aspects and Therapy of Early Tuberculous Infiltrate. W. Neumann.—p. 411.

Technic of Vaccination.—Kaiser points out that, although vaccination has been practiced for more than a century, it still involves dangers. A review of the cases in which complications developed showed that the largest number were the result of the epidermal growth of the pustule. The superficial position of the infectious pus under the thin cover of epidermis is dangerous. Thus it is that efforts have been made to effect an immunization against smallpox without epidermal efflorescence. Studies have been made to determine whether immunity can be produced by other than the cutaneous method. The author reviews experiments with the intracutaneous administration of the vaccine that were conducted by other investigators and then describes his own observations with subcutaneous vaccinations. The mothers of the children prefer this method. In a few cases complications have developed in the form of polymorph exanthem and of vaccinia generalisata. The immunity is still good after a year but cannot yet be estimated for a longer period. Moreover, the favorable effects that have been accomplished in the past with the customary cutaneous method should not be overlooked.

Sedimentation Speed in Cerebral Disorders.—Singer and Edel studied the blood sedimentation speed of 115 patients with cerebral disorders. Their conclusions are based only on cases that were verified by operation or definite clinical manifesta-

tions. They found that the determination of the sedimentation speed of the erythrocytes is valuable, especially from the neurosurgical point of view. The sedimentation reaction permits a differentiation (1) between hydrocephalus with a normal sedimentation speed and cerebral tumor with slightly accelerated sedimentation speed, (2) between serous meningitis (with normal sedimentation speed) and cerebral tumor, (3) between acute encephalitis, in which the sedimentation speed is greatly increased, and cerebral tumor, and (4) between hemorrhagic pachymeningitis (with moderately increased sedimentation speed) and cerebral tumor. The sedimentation speed is helpful also in determining the benign or malignant character of a cerebral tumor. Meningioma and glioma are characterized by a moderately accelerated sedimentation speed and can thereby be differentiated from carcinomatous metastasis, in which the sedimentation speed is greatly accelerated. If the problem is to distinguish between cerebral arteriosclerosis and cerebral tumor, a greatly accelerated sedimentation speed is indicative of cerebral arteriosclerosis, whereas a normal or slightly accelerated sedimentation permits no differentiation in such cases. The authors do not consider these studies completed but are continuing their investigations.

Wiener medizinische Wochenschrift, Vienna

87: 369-400 (April 3) 1937. Partial Index

Development of Birth Injuries of Central Nervous System. A. Eckstein.—p. 370.
Fresh Air for Nurslings in Especially Constructed Window Boxes. F. Hamburger.—p. 373.
Track Encephalitis. H. Hoff and O. Pötzl.—p. 374.
Subcutaneous Cowpox Vaccination. W. Knöpfelmacher.—p. 376.
Benign Form of Epilepsy During Puberty. O. Marburg.—p. 377.
Question of So-Called Serous Meningitis. A. Reuss.—p. 381.
*Diagnostic Significance of Condition of Cerebrospinal Fluid in Encephalitis, Poliomyelitis and Infectious Serous Meningitis. K. Hassmann.—p. 384.

The Cerebrospinal Fluid in Certain Diseases.—Hassmann points out that there are three groups of disorders of the central nervous system which are of especial significance as regards the condition of the cerebrospinal fluid: infectious encephalitis, infectious poliomyelitis and infectious serous meningitis. Nearly all disorders belonging to these groups show similarities not only as regards the clinical symptoms but also as regards the reactions of the cerebrospinal fluid. The examination of the cerebrospinal fluid in a large number of cases with these disorders revealed that it is incorrect to say that the sugar content of the cerebrospinal fluid is always normal or increased in the aforementioned disorders. In all three of these groups he observed numerous cases in which the sugar content of the cerebrospinal fluid was noticeably decreased. He was unable to detect a relationship between cell number, type of cell and the sugar content. Repeated examination of the cerebrospinal fluid in the same patient seemed to indicate that, as regards the sugar content and the cells of the cerebrospinal fluid, individual factors play an important part.

Polska Gazeta Lekarska, Lwów

16: 329-348 (May 2) 1937

Organization of Rural Medical Service. E. Pietrowski.—p. 329.
Primary Dermatomyositis with Hemorrhage: Case. F. Halpern and M. Ferber.—p. 331.
*Abscess of the Prostate. H. Drucker.—p. 333.
Therapeutic Value of Thiosulfate of Sodium Silver in Male Gonorrhea. T. Koniar.—p. 336.
Therapeutic Value of Chemical Group Containing P-Aminobenzenesulfonamide: I. (Prontosil). T. Kucharski.—p. 338.

Abscess of the Prostate.—Drucker operated early in twenty-eight cases with one death due to septicemia. Prognosis of abscess of the prostate when diagnosed correctly and operated on immediately is most always good. One patient had perinephritis but recovered after early operation. Early incision of the abscess has for its object the prevention of recurrence, of rupture into the other organs and of general infection. In hematogenous abscess the prognosis is not so good, especially in neglected cases. Abscess of gonorrheal origin must be opened early, as conservative treatment often leaves a focus of latent infection which, after years of apparent cure, may become active.

Sovetskiy Vrachebnyy Zhurnal, Leningrad

March 30, 1937 (No. 6) Pp. 401-480. Partial Index

*Experimental Data on Etiology of Epidemic Grip. A. A. Smorodintsev, A. I. Drobyshevskaya, S. M. Ostrovskaya and O. I. Shishkina.—p. 408.
Clinical Observations on Men Infected with Influenzal Virus. Ya. L. Gotlib, A. A. Korovin, M. L. Shcherba and N. V. Ilyina.—p. 419.
Campaign Against Grip. D. M. Rossiyskiy.—p. 431.
Epidemiologic Characteristics of the Grip Epidemic of 1936. I. A. Dobreytser.—p. 441.

Epidemic Grip.—Smorodintsev and his associates, in the course of the grip epidemic in 1936, established the fact of quantitative increase in the number of pneumococci, Pfeifer bacillus, Micrococcus catarrhalis and, in a number of cases, of Streptococcus haemolyticus in the throats of the patients. The greatest increase corresponded to the first five or six days. The authors suppose that the primary cause of epidemic grip is a filtrable virus which produces an inflammatory process in the respiratory tract and that the virus activates such microbes as the pneumococcus or the Pfeifer bacillus. Active immunity in mice was increased by subcutaneous injection of nonfatal doses of the virus. The immunity lasted seventy-five days. With the inhalation method of immunization it was extended to 150 days. The virus introduced by the inhalation method is rapidly destroyed and, two days later, the animal is capable of surviving the introduction of 1,000 fatal doses. The authors conclude that the loss of infectivity in an actively immunized animal is due to increased capacity of the tissues, and in particular of the pulmonary tissue, to destroy the virus. Eighty volunteers were infected with increasing doses of the mouse virus, utilizing the inhalation method. The maximal amount introduced was from 0.5 to 1 cc. of a 10 per cent emulsion of lung tissue of white mice, which were infected with a fatal dose of the virus and killed two days later. About one fifth of the volunteers became infected and presented a mild form of the grip, resembling in its main features the epidemic variety. The authors found that quantitative and qualitative analysis in experimental grip showed no increase in the number of pneumococci, Streptococcus haemolyticus, bacillus of Pfeifer or Micrococcus catarrhalis. There was no increase in the amount of the virus present in the respiratory passages. None was present forty-eight hours after the infection. The loss of virulence of the mouse virus introduced into man was also demonstrated by the absence of contagiousness on the part of the medical personnel treating the infected patients. The authors were able to demonstrate that the development of experimental grip depended on the content of the antivirus immune bodies in the blood. This content increased through the method of introduction by inhalation, suggesting prophylactic possibilities against epidemic grip.

Ugeskrift for Læger, Copenhagen

99: 355-382 (April 1) 1937

Significance of Bacterioscopic Diagnosis for Understanding of Epidemiology of Tuberculosis. C. A. Blume.—p. 355.
Rat-Bite Fever: Case. I. Knudsen.—p. 363.
Anemia Due to Goat's Milk: Case. H. E. Nielsen.—p. 366.
*Investigations on Relation Between Bleeding Time and Number of Blood Platelets in Essential Thrombopenia (Werlhof's Disease) After Injection of Epinephrine. A. B. Hansen.—p. 368.

Bleeding Time in Essential Thrombopenia.—Hansen found a marked rise in the thrombocyte count in two cases of essential thrombopenia after injection of epinephrine, in one case maintained during twenty-three days' observation, in the other continuing for a few days. In two splenectomized patients with essential thrombopenia, injection of epinephrine failed to increase the number of thrombocytes. The marked increase in thrombocytes in the peripheral blood after the injection of epinephrine in the first cases is believed to depend on a release of thrombocytes from the various depots in the organism, primarily the reticulo-endothelial system. The author asserts that there is no direct relation between the thrombocyte count in essential thrombopenia on the one hand and the time of bleeding according to Duke and the origin of spontaneous hemorrhages in the skin and mucous membranes on the other. The abnormal duration of bleeding in cases with normal blood platelet values may be due to an agglutination defect in the platelets, and spontaneous hemorrhages in cases with normal platelet count must be explained either by a defective production of thrombokinase or by abnormality of blood vessels.